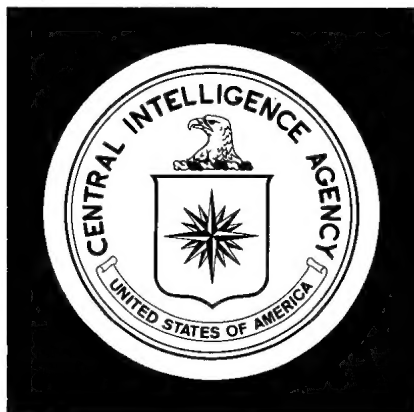


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# Intelligence Handbook

## *Soviet Land Armaments*

**Secret**

SR 76-10135

June 1976

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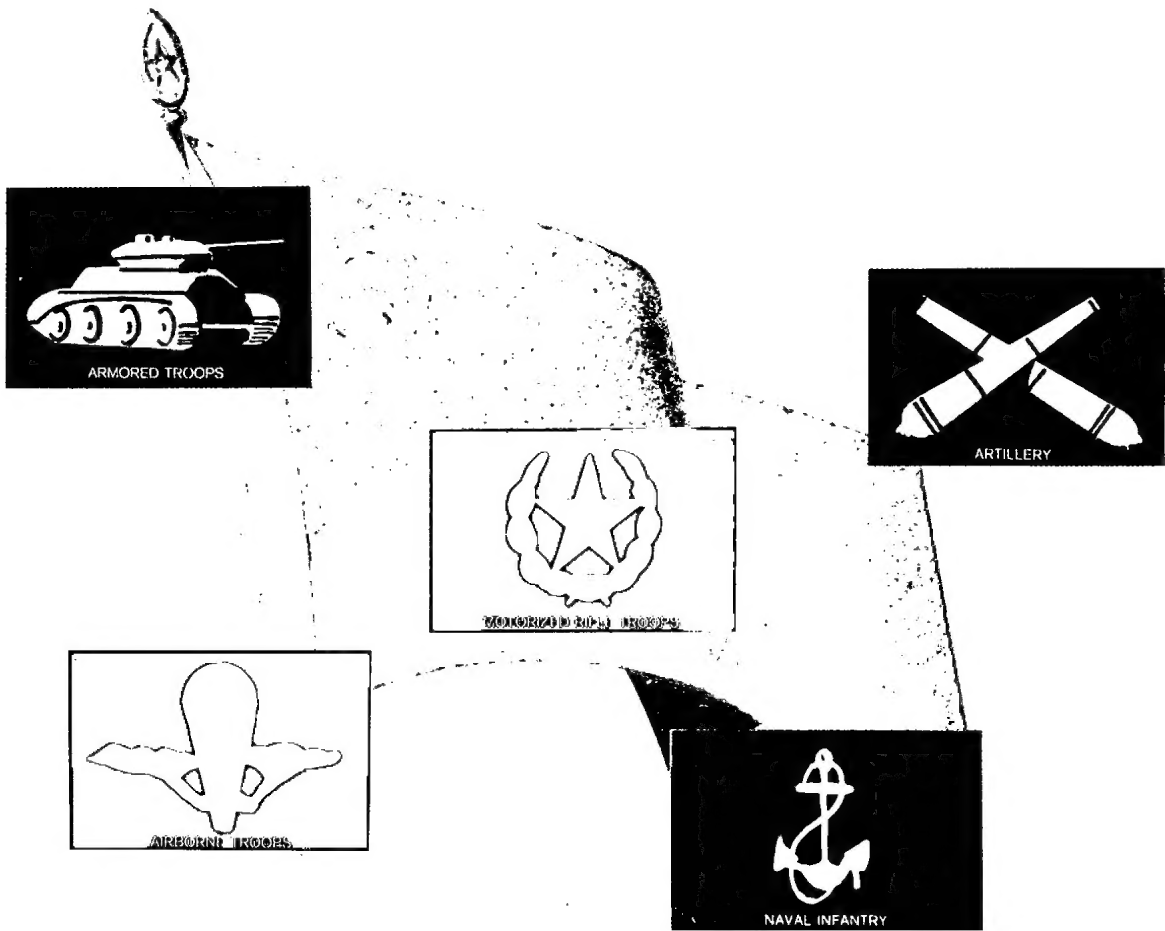
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CENTRAL INTELLIGENCE AGENCY  
Directorate of Intelligence  
June 1976

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Intelligence Handbook  
**Soviet Land Armaments**



*Comments and queries regarding this publication are welcome. They may be directed to  
the Regional Analysis Division, Office of Strategic Research*

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*This handbook describes selected weapons used in the ground forces of the Soviet Union, its allies, and countries that have received Soviet aid. It is not a complete catalog of all Soviet weapons nor a compilation of the modifications to each type. Some of the weapons are no longer being produced but are still widely used. Others, found only in limited numbers in the Soviet forces, have been exported in quantity. The USSR's East European allies also produce weapons—some are exact copies of Soviet models while others are modifications of basic Soviet designs.*

*Because this handbook was prepared for printing before the Intelligence Community began reporting weights and measures in both metric and conventional units, all data are expressed in the conventional units only.*

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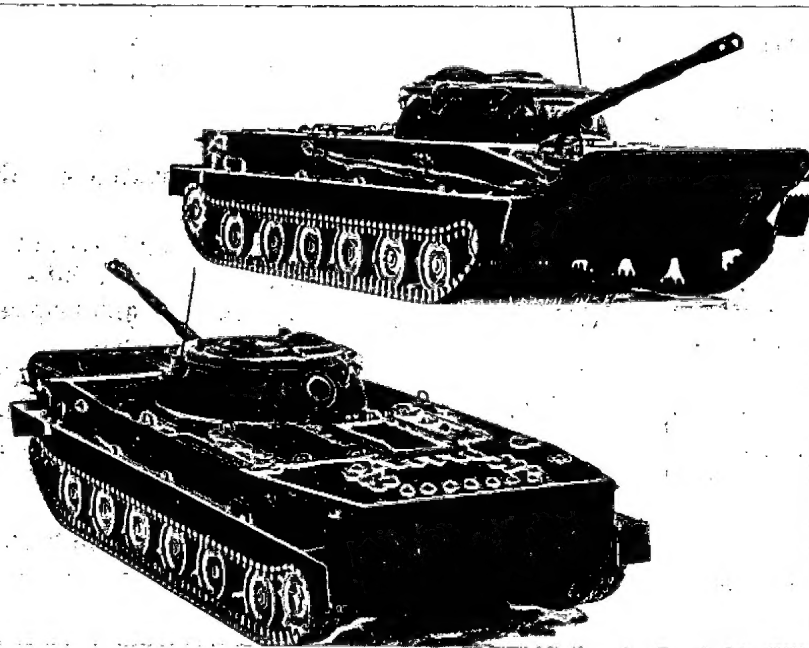
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**SECRET****Tanks****PT-76 Light Amphibious Tank***Characteristics*

Main armament .....	76mm tank gun
Weight .....	15.4 tons
Speed, land .....	27 miles per hour
water .....	6.3 miles per hour
Cruising range .....	160 miles
Crew .....	3

*Remarks*

Standard reconnaissance tank in Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid. Introduced in 1952. Used by Communist forces in Southeast Asia. Lightly armored and undergunned by present Soviet standards. Chassis is used for BTR-50P APC and FROG-2, 3, 4, and 5 rocket launchers.

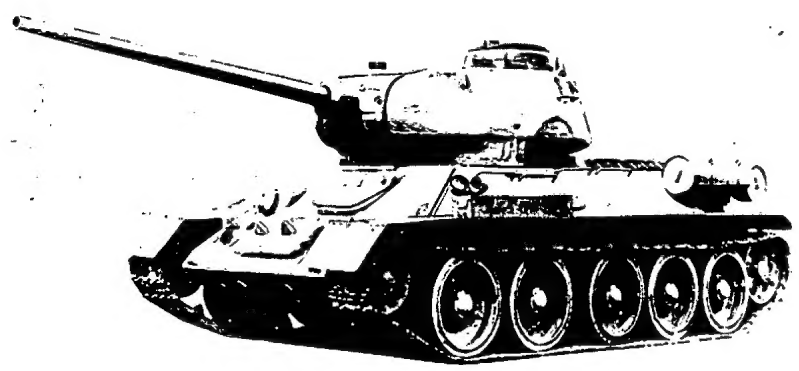
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**Tanks**

**T-34/85 Medium Tank**



*Characteristics*

Main armament . . . . M-1944 85mm tank gun  
Weight . . . . . 35.3 tons  
Speed . . . . . 35 miles per hour  
Cruising range . . . . . 190 miles  
Crew . . . . . 4

*Remarks*

First observed in 1944. Replaced in first-line Soviet units by T-54/55 series, but still retained in stockpiles and used by other Warsaw Pact forces and in countries which have received Soviet military aid.

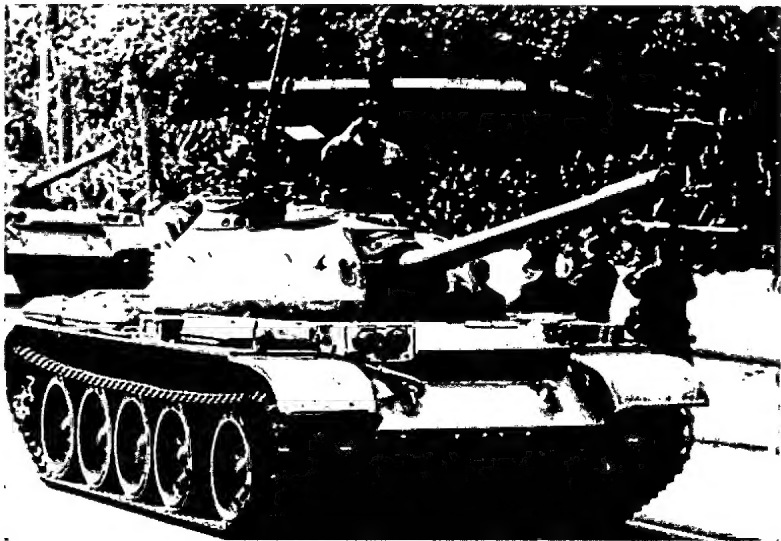
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Tanks

T-54 Medium Tank



Characteristics

Main armament ..... 100mm tank gun  
Weight ..... 40 tons  
Speed ..... 30 miles per hour  
Cruising range ..... 250 miles  
Crew ..... 4

Remarks

First observed in 1949. Distinguishable by hemispherical turret, low silhouette, and 100mm gun. Standard Soviet medium tank until late fifties, now largely replaced in first-line units by T-55 and T-62. Used by other Warsaw Pact forces and in countries which have received Soviet military aid. A Chinese-produced version, T-59, has been exported to Pakistan.

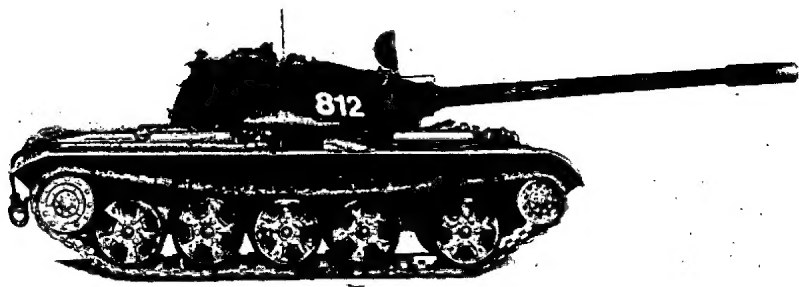
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Tanks

T-55 Medium Tank



Characteristics

Main armament ..... 100mm tank gun  
Weight ..... 40 tons  
Speed ..... 30 miles per hour  
Cruising range ..... 300 miles  
Crew ..... 4

Remarks

Introduced in 1959. Distinguishable from T-54 by flush hatch replacing loader's cupola, and infrared devices mounted on turret and hull front. Czechoslovak version has AA machine gun. Used in Warsaw Pact countries, Middle East, India, and Peru.

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Tanks

T-62 Medium Tank



Characteristics

Main armament . . . 115mm smoothbore gun  
Weight . . . . . 40.2 tons  
Speed . . . . . 30 miles per hour  
Cruising range . . . . . 310 miles  
Crew . . . . . 4

Remarks

First observed in 1961. Distinguishable from T-54/55 series by spacing of road wheels, larger, more circular turret, longer hull, and 115mm smoothbore gun with bore evacuator mounted in middle of tube. Used by Soviet and other Warsaw Pact armies. Has been exported to Middle East, India, and Afghanistan.

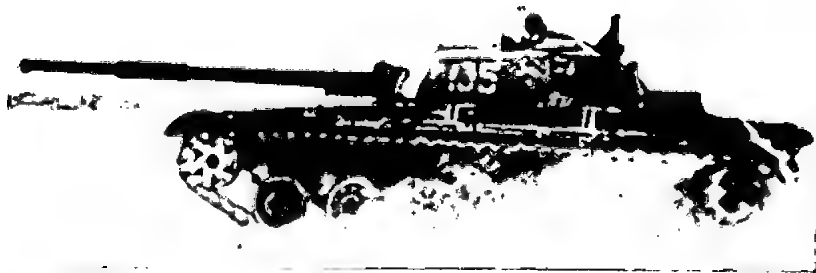
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**Tanks**

**T-72 Medium Tank**



*Characteristics*

Main armament . . . smoothbore gun, 115mm  
or larger  
Weight . . . . .about 40 tons  
Crew . . . . .3

*Remarks*

Early prototypes first observed in May 1970. Substantial numbers of a variety of prototypes produced and extensively tested from the mid-sixties through the early seventies. Has new suspension system and probably improved armor protection. Mounts a large caliber, smoothbore gun. Has an automatic loader, thus eliminating one crew member. Large-scale series production probably began in 1974.

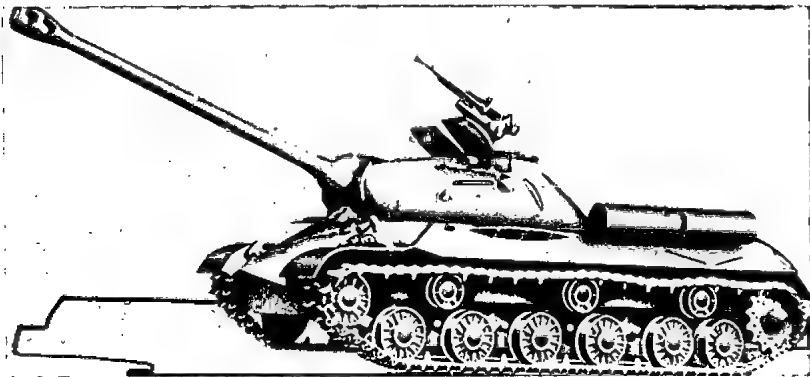
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Tanks

JS-3 Heavy Tank



Characteristics

Main armament ..... 122mm tank gun  
Weight ..... 50.6 tons  
Speed ..... 23 miles per hour  
Cruising range ..... 85 miles  
Crew ..... 4

Remarks

Features sloping, angular armor and low silhouette. Introduced in 1945. Largely replaced in Soviet units by T-10 heavy tank, but still in countries which have received Soviet military aid.

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Tanks

T-10 Heavy Tank



Characteristics

Main armament ..... 122mm tank gun  
Weight ..... 55 tons  
Speed ..... 30 miles per hour  
Cruising range ..... 155 miles  
Crew ..... 4

Remarks

Entered service in 1953. Resembles JS-3, which it has largely replaced. Distinguishable from JS-3 by more angular hull armor, 14 vice 12 road wheels, and bore evacuator mounted on gun. Improved version, T-10M, first seen in 1958, has overhang welded on rear of turret, longer gun, and night vision devices. Some later versions have longer gun, improved muzzle brake, and improved turret. Some have welded rear overhang.

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Armored Personnel Carriers

BTR-152 Armored Personnel Carrier



Characteristics

Main armament . . . . . 12.7mm machine gun  
Weight . . . . . 9.9 tons  
Speed . . . . . 40 miles per hour  
Cruising range . . . . . 490 miles  
Capacity . . . . . 1 driver, 18 troops

Remarks

Introduced in 1950 and produced in many different versions—covered, open top, and mounting AA guns. Not amphibious. Gradually being replaced by BTR-60PB and BMP armored personnel carriers. BTR-152 for years was standard armored personnel carrier in Soviet and other Warsaw Pact forces. Also used by Arab forces in the Middle East.

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Armored Personnel Carriers

BTR-40 Armored Personnel Carrier



*Characteristics;*

Main armament ..... usually 7.62mm machine gun  
Weight ..... 5.8 tons  
Speed ..... 50 miles per hour  
Cruising range ..... 400 miles  
Capacity ..... 2 crewmen, 8 troops

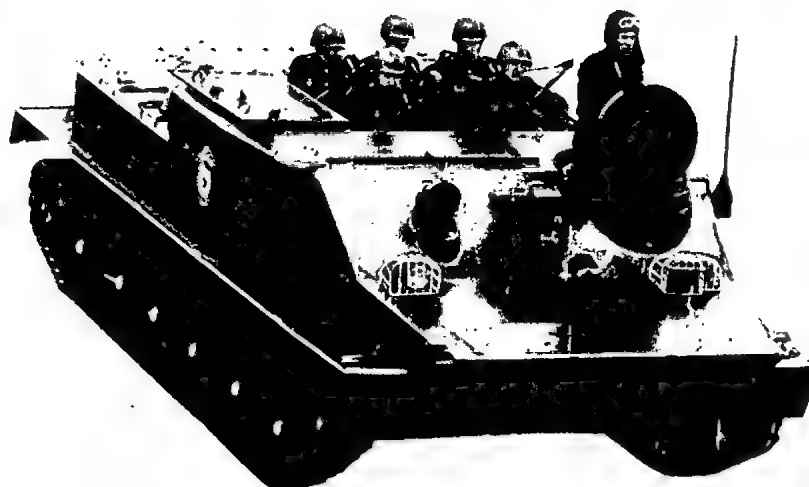
*Remarks*

Introduced in 1951. Used primarily as command and reconnaissance vehicle. Some versions mount twin 14.5mm antiaircraft heavy machine guns in open troop compartment. Replaced in Soviet and some other Warsaw Pact forces by BRDM. Used in countries which have received Soviet military aid.

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### BTR-50PK Armored Personnel Carrier



Main armament	usually 7.62mm machine gun
Weight	16 tons
Speed, land	27 miles per hour
water	6 miles per hour
Cruising range	155 miles
Capacity	2 crewmen, 18 troops

Amphibious carrier on PT-76 tank chassis. Original version (BTR-50P), first observed in 1955, does not have overhead armor for troop compartment. Other versions, the BTR-50PU command vehicle and the Czechoslovak OT-62, have two cupolas in front. Used in Warsaw Pact forces and countries which have received Soviet military aid.

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**Armored Personnel Carriers**

**BTR-60PB Armored Personnel Carrier**



*Characteristics*

Main armament . . . usually one 14.5mm and  
one 7.62mm machine gun  
Weight . . . . . 11 tons  
Speed, land . . . . . 50 miles per hour  
water . . . . . 6.2 miles per hour  
Cruising range . . . . . 310 miles  
Capacity . . . . . 1 driver, 10 troops

*Remarks*

Amphibious. Original version (BTR 60P), first observed in 1961, has open top. Another version (BTR 60PK) has overhead armor but no turret. Used in Soviet and other Warsaw Pact forces, and seen in Cuba, and Middle East. Similar vehicle, OT-64, is produced in Czechoslovakia.

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Armored Personnel Carriers

BMP Amphibious Infantry Combat Vehicle



Characteristics

Main armament ..... 73mm gun, Sagger  
antitank missile  
Weight ..... about 14 tons  
Speed, land ..... 35 miles per hour  
water ..... 4 miles per hour  
Cruising range ..... 180 miles  
Capacity ..... 3 crewmen, 8 troops

Remarks

Amphibious armored vehicle first observed in 1967. Replacing armored personnel carriers in some Soviet and Warsaw Pact units. Also being produced in Czechoslovakia for distribution throughout the Warsaw Pact. Observed in Middle East.

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Armored Personnel Carriers

BMD Airborne Amphibious Combat Vehicle



Characteristics

Main armament ..... 73mm gun and a  
Sagger antitank missile  
Weight ..... about 7 tons  
Crew ..... 3-4

Remarks

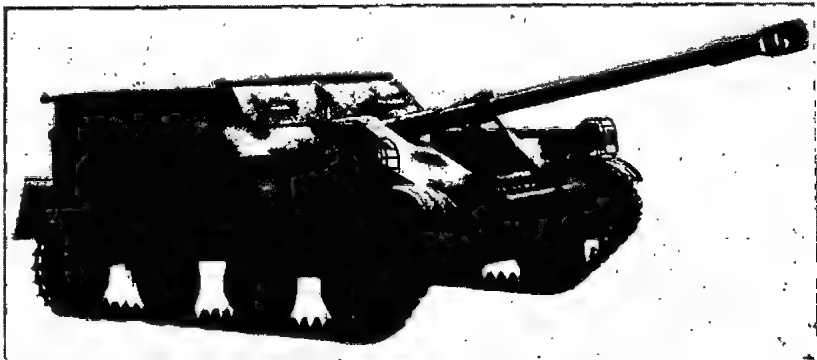
First observed in 1970. It is amphibious and air droppable, and has a variable height suspension system. Has the same turret as the BMP combat vehicle, including the 73mm smoothbore gun and a launch rail for the Sagger antitank guided missile. Apparently is intended as replacement for ASU-57 and ASU-85 in airborne units.

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Assault Guns

ASU-57 57mm Airborne Assault Gun



Characteristics

Weight ..... 3.7 tons  
Speed ..... 28 miles per hour  
Cruising range ..... 155 miles  
Crew ..... 3

Remarks

Lightly armored with low silhouette and open top. Can carry three riflemen in addition to three-man crew. Assigned to Soviet airborne units. Can be air-dropped. Largely being replaced by BMD. Probably still used for training.

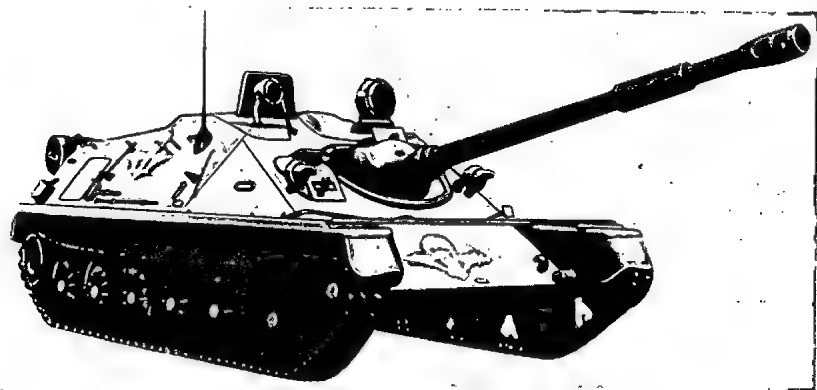
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**Assault Guns**

**ASU-85 85mm Airborne Assault Gun**



*Characteristics*

Weight ..... 14 tons  
Speed ..... 28 miles per hour  
Cruising range ..... 150 miles  
Crew ..... 4

*Remarks*

Probably can be air-dropped by AN-22. Designed to provide antitank support for airborne forces. Full armor and larger gun make it an improvement over ASU-57. First observed in 1962. Used widely in Soviet forces and to a limited extent with Polish forces.

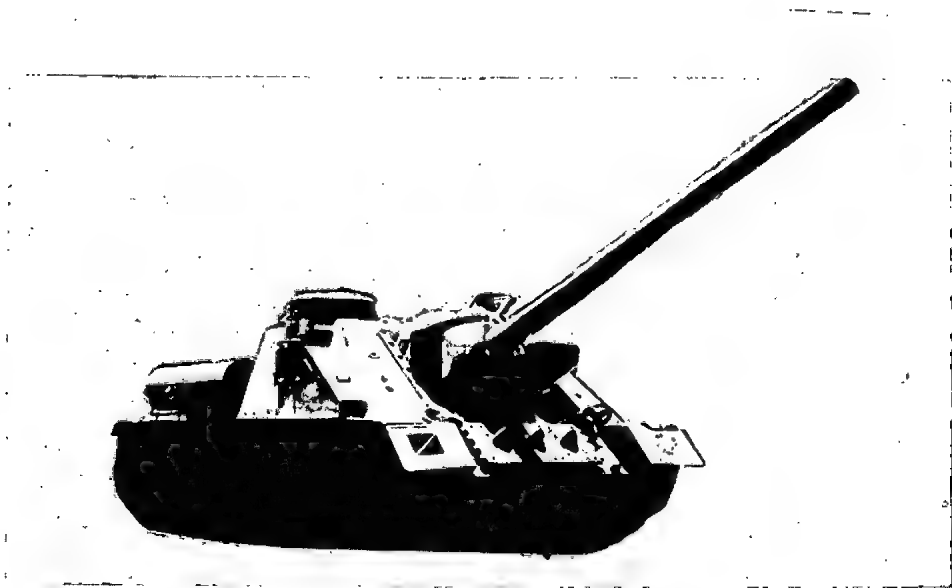
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Assault Guns

SU-100 100mm Assault Gun



Characteristics

Weight ..... 33.1 tons  
Speed ..... 35 miles per hour  
Cruising range ..... 190 miles  
Crew ..... 4

Remarks

Mounts 100mm gun on T-34 medium tank chassis. First observed in 1945. Still used in some Soviet units and other Warsaw Pact forces, as well as in countries which have received Soviet military aid.

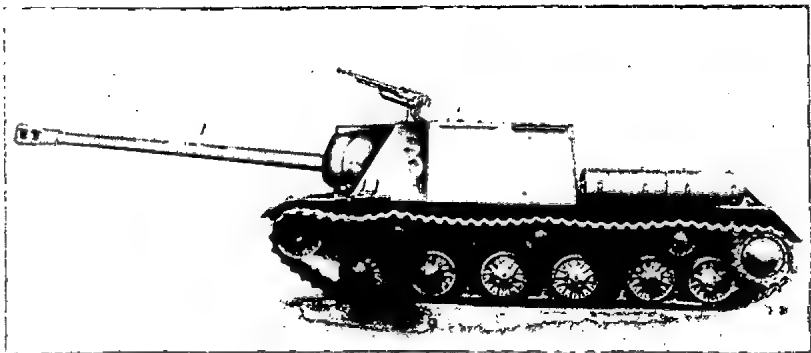
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**Assault Guns**

**JSU-122 122mm Assault Gun**



*Characteristics*

Weight ..... 50.6 tons  
Speed ..... 23 miles per hour  
Cruising range ..... 85 miles  
Crew ..... 5

*Remarks*

Consists of 122mm artillery piece mounted in armored super-structure on JS heavy tank chassis. First observed in 1944. Probably obsolete in Soviet forces but still in use in other Warsaw Pact countries.

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Assault Guns

JSU-152 152mm Heavy Assault Gun



Characteristics

Weight ..... 51.2 tons  
Speed ..... 23 miles per hour  
Cruising range ..... 85 miles  
Crew ..... 5

Remarks

Mounts 152mm gun with limited traverse and protruding mantlet on JS heavy tank chassis. Similar in appearance to JSU-122 but has shorter gun. First observed in 1944. Still used in some Soviet units and in other Warsaw Pact forces.

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**Reconnaissance Vehicles**

**BRDM Amphibious  
Armored Reconnaissance Vehicle**



*Characteristics*

Main armament . . . usually 7.62mm machine  
gun, antitank missiles  
Weight . . . . . 6.17 tons  
Speed, land . . . . . 50 miles per hour  
water . . . . . 5.5 miles per hour  
Cruising range . . . . . 310 miles  
Crew . . . . . 5

*Remarks*

Has four main wheels. Four auxiliary wheels in belly can be raised or lowered as needed. First observed in 1959. Produced in three other versions, each specially designed to carry Snapper, Swatter, or Sagger antitank missiles. Used by Soviet and some other Warsaw Pact forces and in countries which have received Soviet military aid.

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Reconnaissance Vehicles

BRDM-2 Amphibious  
Armored Reconnaissance Vehicle



*Characteristics*

Main armament ..... 14.5mm machine gun,  
7.62mm machine gun  
Weight ..... about 7.5 tons  
Speed ..... 60 miles per hour  
Cruising range ..... 310  
Crew ..... 3-4

*Remarks*

First observed in 1966. Has been replacing original BRDM in reconnaissance role. Basically same type of vehicle with four road wheels and four auxiliary wheels in belly. BRDM-2 distinguishable by heavy machine gun mounted in conical turret. Another version, having no turret, has been fitted with Sagger antitank guided missiles.

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Antitank Guided Missiles

AT-1 Snapper



Characteristics

Range, maximum	2,500 yards
minimum	660 yards
Guidance	wire
Armor penetration	12 inches
Launch platforms	GAZ-69 and BRDM
Cruising range, GAZ-69	225 miles
BRDM	310 miles
Missile load, GAZ-69	.4
BRDM	.3

Remarks

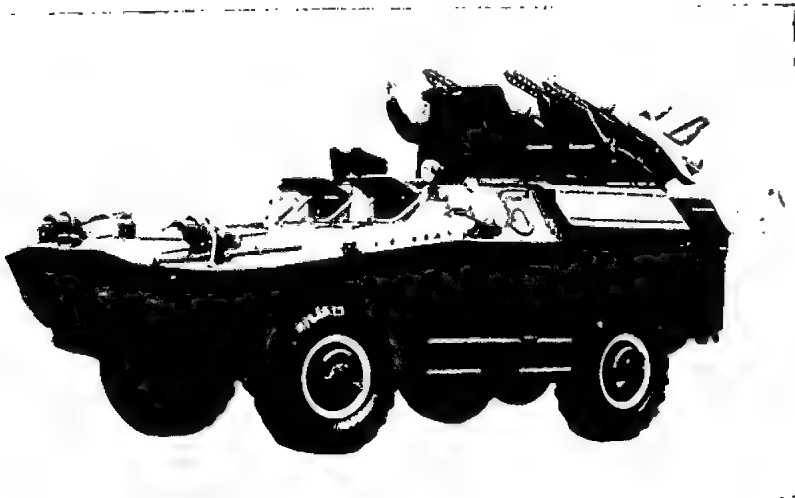
Mounted on either GAZ-69 truck or more modern BRDM amphibious armored reconnaissance vehicle. GAZ-69 mounts four missiles in square. BRDM mounts three abreast on retractable pylon. AT-1 is distinguished from AT-2 and AT-3 by larger, more triangular fins. Introduced in early sixties, AT-1 has been exported to Warsaw Pact countries, Afghanistan, Cuba, and Egypt.

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Antitank Guided Missiles

AT-2 Swatter



Characteristics

Range, maximum ..... 3,300 yards  
          minimum ..... 600 yards  
Guidance ..... radio  
Armor penetration ..... 19 inches  
Launch platform ..... BRDM  
Cruising range ..... 310 miles  
Missile load ..... 4

Remarks

Introduced in early sixties. BRDM amphibious vehicle mounts four AT-2s on retractable pylon. Used in Soviet and some other Warsaw Pact forces.

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**Antitank Guided Missiles**

**AT-3 Sagger**



*Characteristics*

Range, maximum	3,300 yards
minimum	550 yards
Guidance	wire
Armor penetration	16 inches
Launch platform	BRDM
Cruising range	310 miles
Missile load	14

*Remarks*

Introduced in mid-sixties. BRDM and BRDM-2 amphibious vehicles can each mount a group of six AT-3s on retractable pylon with armored cover. Portable version of AT-3 can be carried and fired by one man. Used by forces of Warsaw Pact, Yugoslavia, Afghanistan, North Korea, North Vietnam, and Middle East.

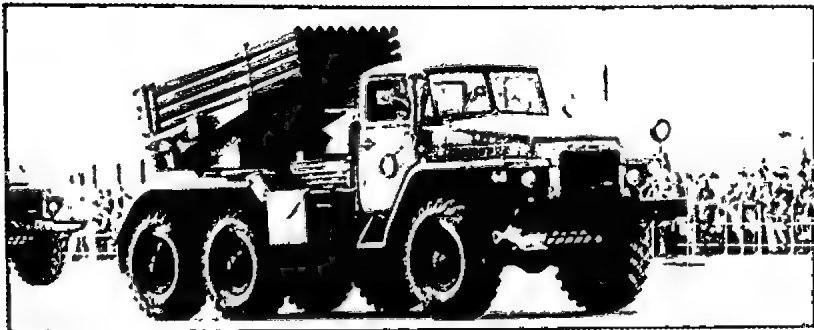
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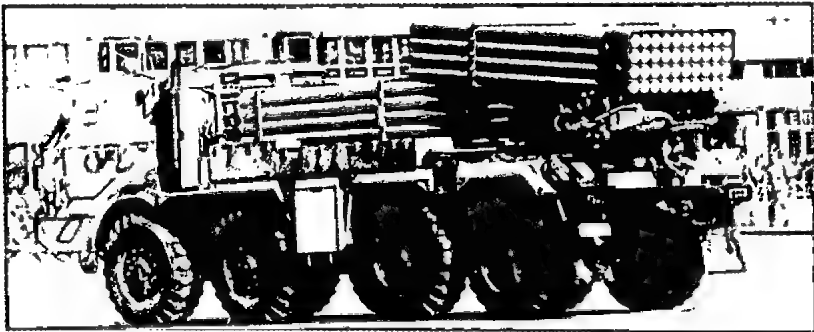
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Unguided Rockets

BM-21, RM-70 122mm Rocket Launcher



BM-21



RM-70

Characteristics

	BM-21	RM-70
Vehicle	Ural-375 truck	Tatra-813 truck
Weight (with full rocket load)	14.5 tons	28.6 tons
Cruising range	470 miles	560 miles
Rocket load	40	80
Range of rocket		
maximum	22,400 yards	same
minimum	330 yards	same
Propellant	solid	same

Remarks

BM-21 first observed in 1964. Smallest caliber postwar Soviet rocket launcher. Four banks of 10 launchers. First launcher to be mounted on Ural-375 truck. Air transportable. In 1972 BM-21 was seen mounted on Tatra-813 truck in Czechoslovakia. Czech version—designated RM-70—has mechanized reloader with salvo of 40 additional rockets mounted between cab and rear. Reloading can be accomplished within 3 minutes.

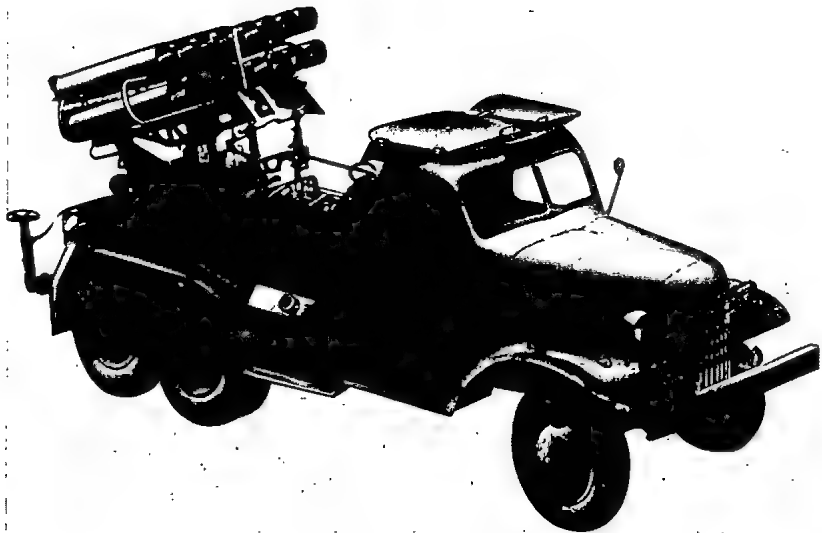
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**Unguided Rockets**

**BM-14-16**  
**140mm Rocket Launcher**



*Characteristics*

Vehicle ..... ZIL-151 truck  
Weight (with full  
rocket load) ..... 9.1 tons  
Cruising range ..... 470 miles  
Rocket load ..... 16  
Range of rocket  
maximum ..... 10,700 yards  
minimum ..... 440 yards

*Remarks*

Mounted in two banks of eight launchers. BM-14 is replacement for 16-round BM-13. First observed in 1954. Used in Warsaw Pact forces, China, and Indonesia.

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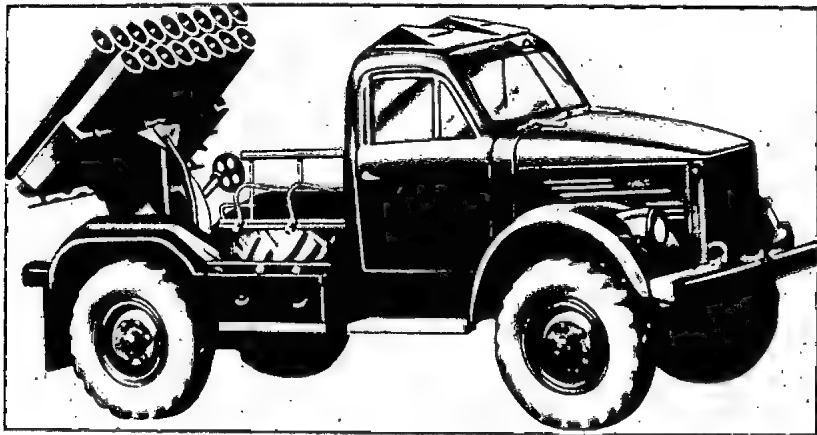
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Unguided Rockets

BM-14-17  
140mm Rocket Launcher



Characteristics

Vehicle ..... GAZ-63 truck  
Weight (with full  
rocket load) ..... 4.7 tons  
Cruising range ..... 400 miles  
Rocket load ..... 17  
Range of rockets  
maximum ..... 10,700 yards  
minimum ..... 440 yards

Remarks

Mounted on much lighter truck than BM-14-16. Lacks stabilizing jacks of heavier 140mm systems. First observed in 1959. Used by Soviet and Polish forces.

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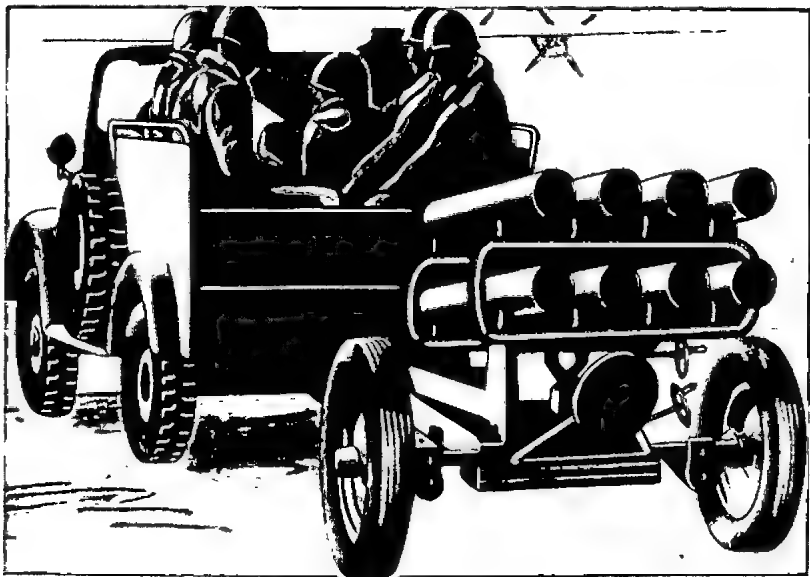


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Unguided Rockets

140mm Airborne Rocket Launcher



Characteristics

Weight (with full  
rocket load) ..... 1,500 pounds  
Rocket load ..... 8  
Range of rockets  
maximum ..... 10,700 yards  
minimum ..... 440 yards

Remarks

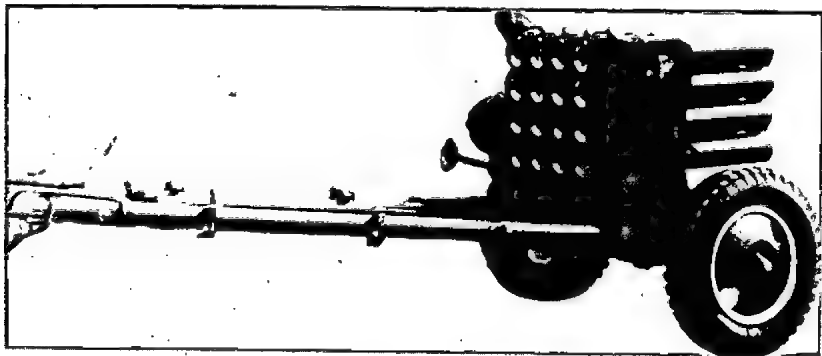
One of two towed rocket launchers used by Soviet and other Warsaw Pact forces. Well suited for airborne operations because of light weight. First observed in 1962.

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Unguided Rockets

M-1965 140mm  
Airborne Rocket Launcher



Characteristics

Weight (with full  
rocket load) ..... 4,400 pounds  
Rocket load ..... 16  
Range of rockets  
maximum ..... 10,700 yards  
minimum ..... 440 yards

Remarks

Sixteen tubes arranged in square. Well suited for airborne  
operations. First observed in 1964.

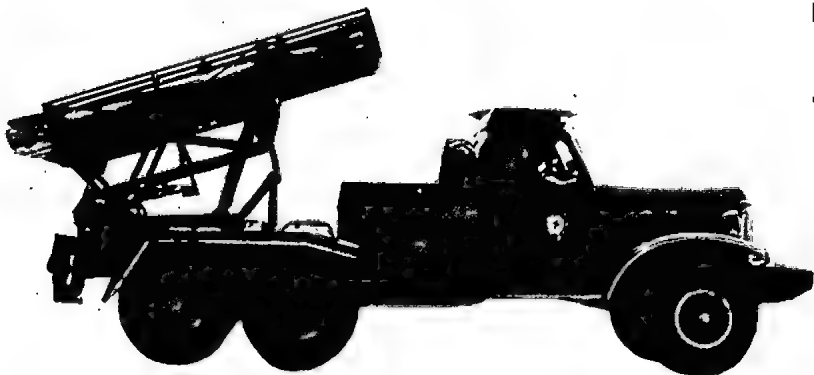
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**SECRET**

**Unguided Rockets**

**BMD-20 200mm Rocket Launcher**



*Characteristics*

Vehicle ..... ZIL-157 truck  
Weight (with full  
rocket load) ..... 9.6 tons  
Cruising range ..... 370 miles  
Rocket load ..... 4  
Range of rocket  
maximum ..... 22,200 yards  
minimum ..... 2,930 yards  
Propellant ..... solid

*Remarks*

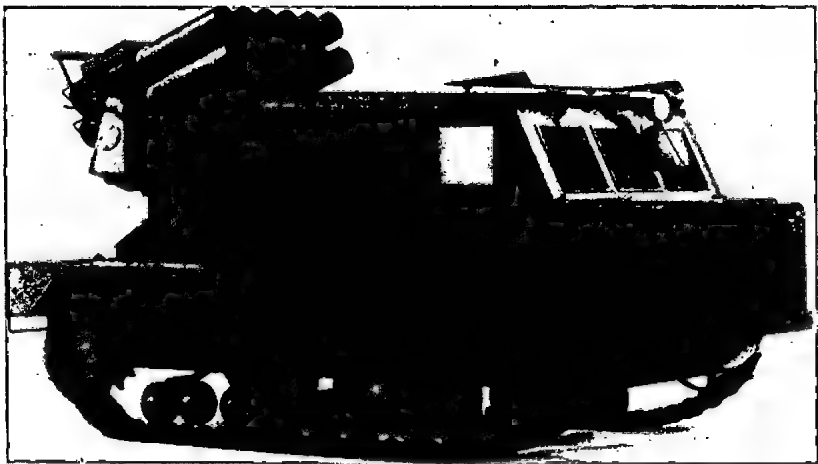
First seen in 1954 on ZIL-151 truck, later on ZIL-157. Mounted in single bank of four open-frame launchers. Has been seen in Cuba and may be in use in some Warsaw Pact forces.

**SECRET**

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Unguided Rockets

BM-24 240mm Rocket Launcher



Characteristics

Vehicle	AT-S medium tracked artillery tractor
Weight (with full rocket load)	16 tons
Cruising range	155 miles
Rocket load	12
Range of rocket	
maximum	8,000 yards
minimum	4,820 yards
Propellant	solid

Remarks

Introduced in mid-fifties. Vehicle has excellent mobility and can carry entire firing crew of six.

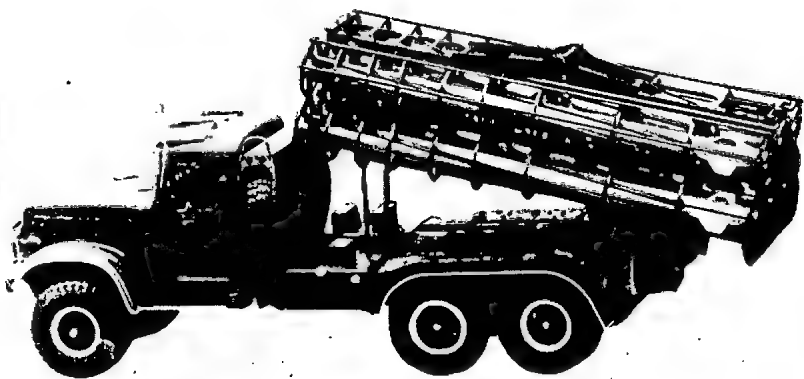
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**SECRET**

**Unguided Rockets**

**BM-25 250mm Rocket Launcher**



*Characteristics*

Vehicle .....	KRAZ-214 general purpose truck
Weight (with full rocket load) .....	18.7 tons
Cruising range .....	330 miles
Rocket load .....	6
Range of rocket	
maximum .....	61,000 yards
minimum .....	19,700 yards
Propellant .....	liquid

*Remarks*

Largest multiple rocket launcher in Soviet army. First observed in 1957. Has six rockets in two banks of three open-frame launchers. Warhead slightly more effective than 8-inch artillery round.

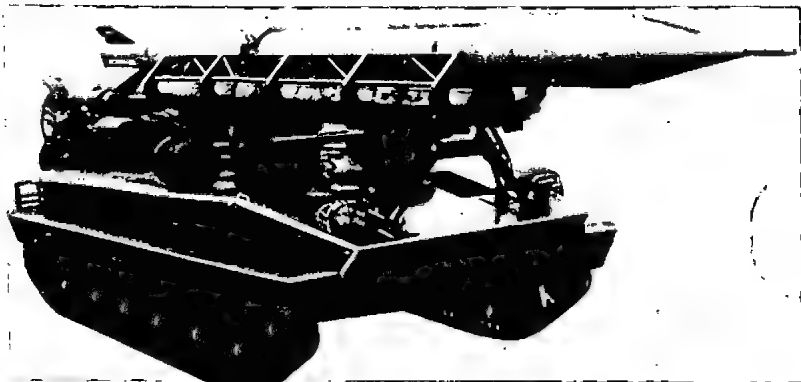
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Unguided Rockets

FROG-3, 4, 5



Characteristics

	FROG-3	FROG-5
Launcher weight (with rocket)	15.7 tons	15.7 tons
Launcher cruising range	155 miles	155 miles
Rocket weight	4,890 pounds	4,700 pounds
Warhead weight	1,100 pounds	900 pounds
Warhead diameter	21.1 inches	15.7 inches
Maximum range		
HE and nuclear warheads	18 nautical miles	18 nautical miles
CW warhead	33 nautical miles	33 nautical miles
Propellant	solid	solid

Remarks

All are mounted on chassis of PT-76 light amphibious tank, but none is amphibious. They differ only in the size and contents of their warheads. FROG-3 carries a nuclear warhead, and could also carry tactical CW and HE warheads. FROG-5 is a trainer which carries a concrete-filled dummy warhead and a mass-fill HE warhead. Another version, the FROG-4, has not been seen in recent years, and its operational status is unknown. FROG-3 and FROG-4 were first observed in 1960, and FROG-5 in 1964. FROGs have been seen with Soviet and other Warsaw Pact forces and in Cuba. Being replaced with FROG-7 in Soviet and other Warsaw Pact forces.

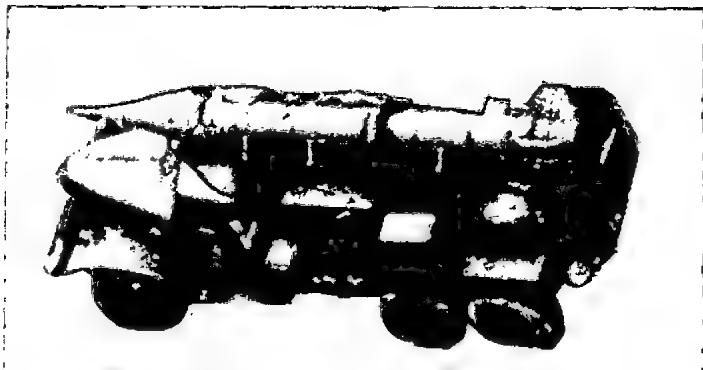
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**Unguided Rockets**

**FROG-6**



*Characteristics*

Vehicle ..... ZIL-157 truck  
Launcher weight  
(with rocket) ..... 8.7 tons  
Rocket weight ..... 2,000-2,500 pounds

*Remarks*

A nonfiring training system. First observed in 1965. Seen with Soviet and East German forces.

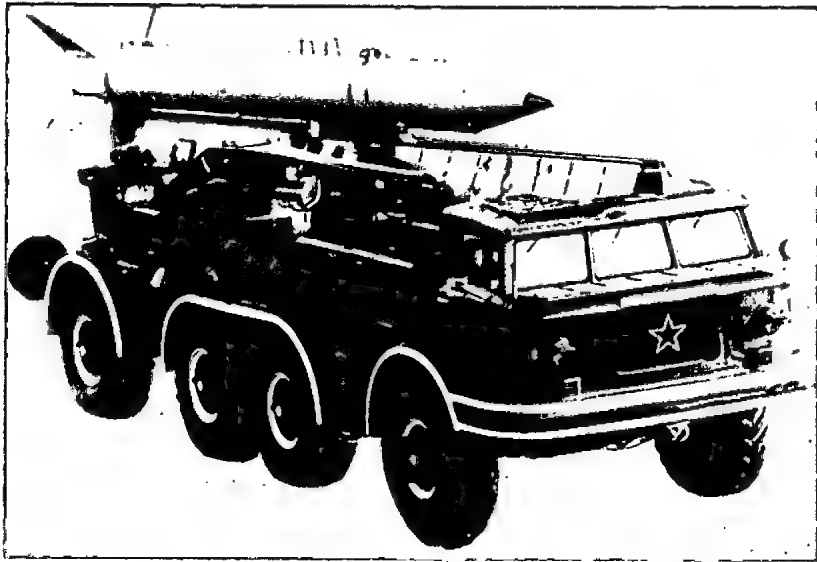
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Unguided Rockets

FROG-7



Characteristics

Launcher weight	
(with rocket)	.....about 13 tons
Launcher cruising range	..... 310 miles
Rocket weight	..... 5,000-6,000 pounds
Warhead weight	
HE	..... 1,200 pounds
nuclear	..... 1,200 pounds
chemical	..... 850 pounds
Maximum range	..... 37-43 nautical miles
Propellant	..... solid

Remarks

First observed in 1965. Eight-wheel launcher provides greater mobility than tracked launcher. FROG-7 is distinguishable from earlier FROGs by single motor section as opposed to two in tandem. FROG-7 is replacing older FROGs in first-line Soviet and Warsaw Pact divisions and has been exported to the Middle East.

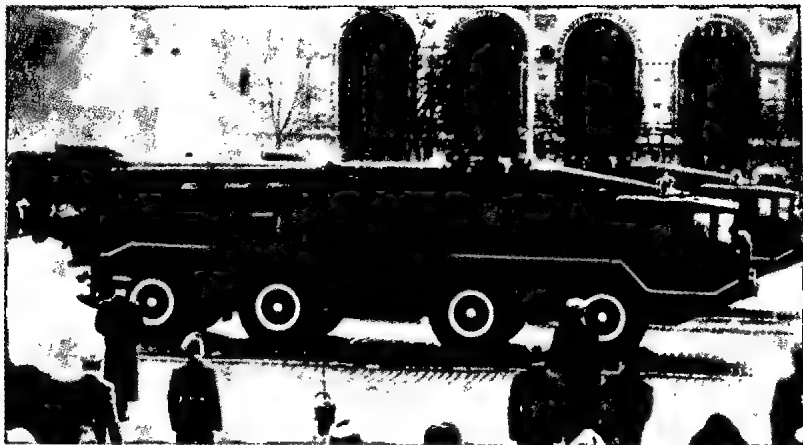
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Short-Range Ballistic Missile Systems

Scud



Scud B

Characteristics

	Scud A	Scud B
Warhead type	HE/nuclear/CW	same
Warhead weight	1,500-2,800 pounds	2,200 pounds
Maximum range	86-118 nm	162 nm
Minimum range	30 nm	same
Maximum yield	40 kilotons	300 kilotons
Minimum yield	10 kilotons	5 kilotons
Transporter-erector-launcher	JS tank chassis	JS tank chassis MAZ-543

Remarks

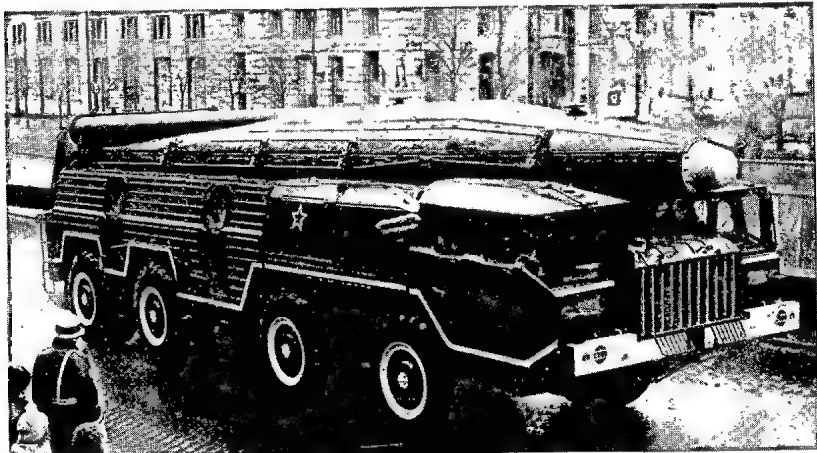
Army- and front-level weapon. Uses liquid propellant. Inertially guided. Found with Soviet and Warsaw Pact forces, as well as those of other Soviet allies.

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Short-Range Ballistic Missile Systems

Scaleboard



Characteristics

- Warhead type ..... nuclear
- Warhead weight ..... 1,000-1,300 pounds
- Maximum range ..... 500 nm
- Minimum range ..... unknown
- Maximum yield ..... 200 kilotons
- Minimum yield ..... 30 kilotons
- Transporter-erector-launcher ..... MAZ-543

Remarks

Introduced in 1965. Front-level weapon. Inertially guided, two-stage, solid-propellant missile carried in environmental pod. Found only in the Soviet Union.

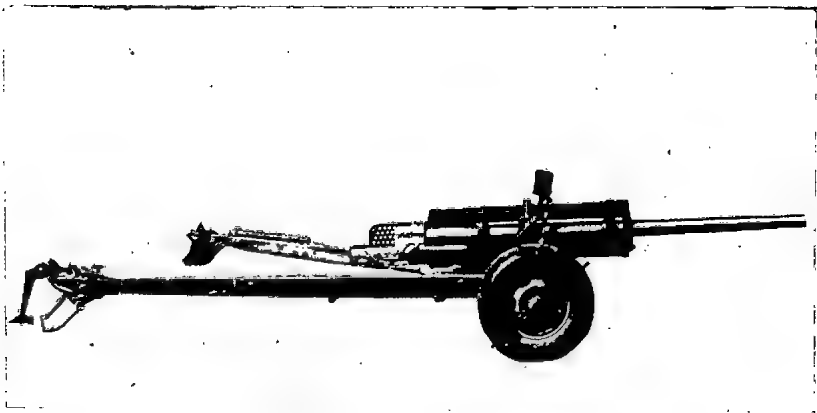
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**SECRET**

**Artillery**

**M-1943 57mm Antitank Gun**



*Characteristics*

Weight ..... 1.4 tons  
Maximum rate of fire ..... 25 rounds per minute  
Maximum range  
(indirect fire) ..... 9,200 yards

*Remarks*

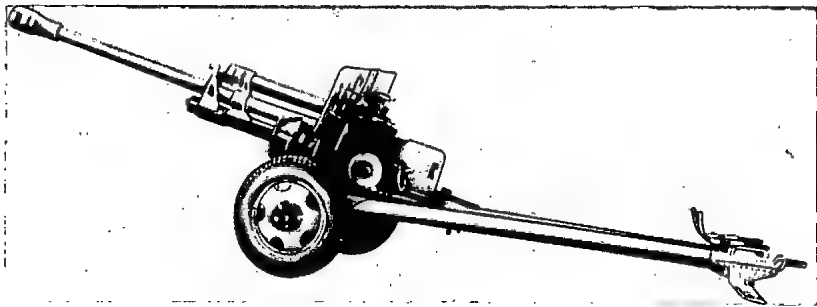
World War II piece replaced in Soviet forces by larger caliber weapons and antitank missiles, but still widely used in countries which have received Soviet military aid.

**SECRET**

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Artillery

M-1942 76mm Divisional Gun



Characteristics

Weight .....2.75 tons  
Maximum rate of fire ..... 15 rounds per minute  
Maximum range  
(indirect fire) ..... 14,550 yards

Remarks

World War II gun once widely used in Soviet forces as both field artillery piece and antitank weapon. Replaced by 85mm and 100mm pieces and now used primarily for training. Still standard equipment in many countries which have received Soviet military aid.

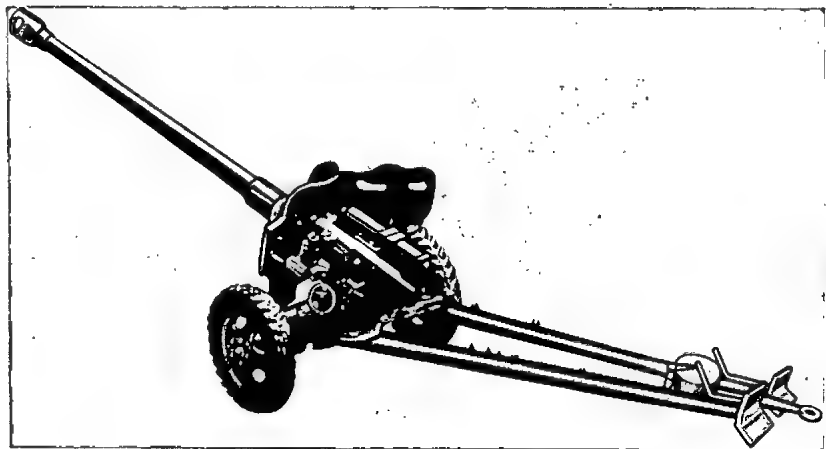
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SECRET

Artillery

D-44 85mm Field Gun



Characteristics

Weight ..... 1.9 tons  
Maximum rate of fire ..... 10 rounds per minute  
Maximum range  
(indirect fire) ..... 17,120 yards

Remarks

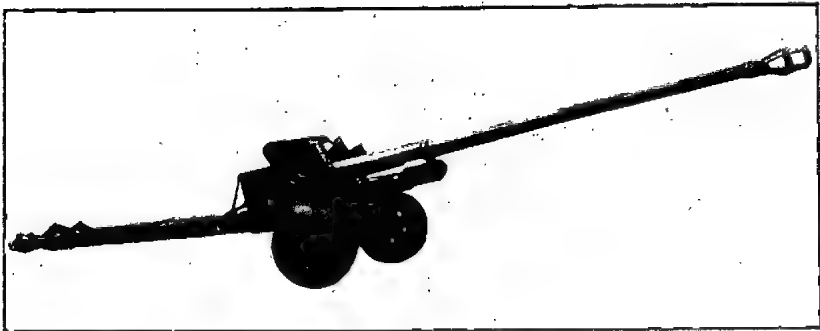
Essentially the same as T-34/85 tank gun. Used as both field artillery piece and antitank weapon. Normally towed, but auxiliary-propelled version also in use. D-44 has largely been replaced in Soviet forces by M-1955 100mm field gun, but is still widely used in other Warsaw Pact forces and in countries which have received Soviet military aid.

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Artillery

BS-3 100mm Field Gun (M-1944)



Characteristics

Weight .....3.85 tons  
Maximum rate of fire .....8-10 rounds per minute  
Maximum range  
(indirect fire) ..... 23,000 yards

Remarks

Fires same ammunition as T-54/55 tank gun. Entered service near close of World War II. Used as both field artillery piece and antitank weapon. Largely replaced by M-1955 100mm field gun. BS-3 is distinguishable by dual tires and recoil mechanism which protrudes beyond shield below barrel. Obsolete in Soviet forces but still used in other Warsaw Pact forces and in countries which have received Soviet military aid.

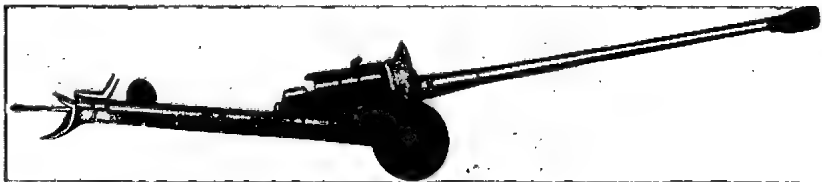
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**SECRET**

**Artillery**

**M-1955 100mm Field Gun**



*Characteristics*

Weight .....3.7 tons  
Maximum rate of fire .....7 rounds per minute  
Maximum range  
(indirect fire) ..... 23,000 yards

*Remarks*

Introduced in mid-fifties. Fires same shell as BS-3 but is lighter and distinguishable from BS-3 by recoil mechanism above barrel and behind shield and by single tires. A later version of M-1955 has longer barrel and smooth bore. Used as both field artillery piece and antitank weapon. Has largely replaced BS-3 in Soviet units and is used by other Warsaw Pact forces and countries which have received Soviet military aid.

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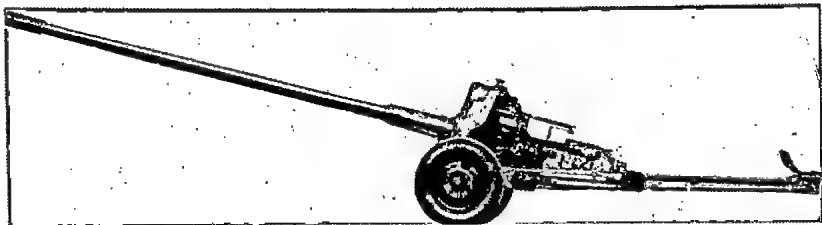
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Artillery

T-12 100mm Antitank Gun



Characteristics

Weight ..... 4 tons  
Maximum rate of fire ..... 10 rounds per minute  
Maximum range  
(indirect fire) ..... 21,300 yards

Remarks

Resembles the M-1955 field gun. A modified version, the T-12A, was first observed in East Berlin in 1972. The T-12 is also found in East Germany, Yugoslavia, North Korea, and Cuba.

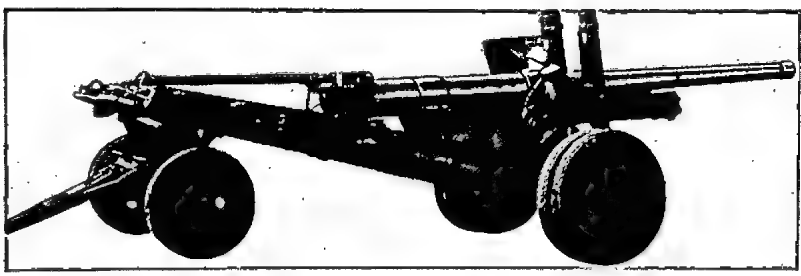
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Artillery

A-19 122mm Corps Gun (M-1931/1937)



*Characteristics*

Weight ..... 8.7 tons  
Maximum rate of fire ..... 5-6 rounds per minute  
Maximum range  
(indirect fire) ..... 22,750 yards

*Remarks*

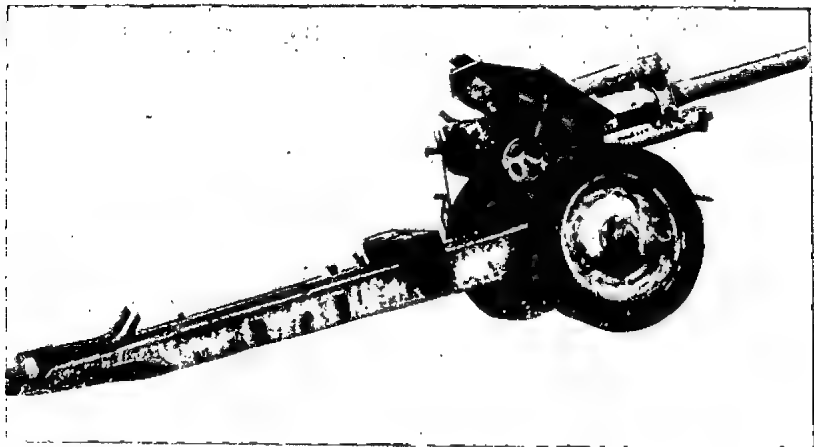
Postwar versions have dual pneumatic or sponge-rubber-filled tires in place of spoked wheels with solid rubber tires on early models. Obsolete in Soviet forces but still used in other Warsaw Pact countries.

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Artillery

M-30 122mm Howitzer (M-1938)



Characteristics

Weight ..... 2.7 tons  
Maximum rate of fire ..... 6 rounds per minute  
Maximum range ..... 12,900 yards

Remarks

Being replaced in Soviet and some Warsaw Pact forces by D-30 howitzer. Still standard equipment in other Warsaw Pact forces and countries which have received Soviet military aid.

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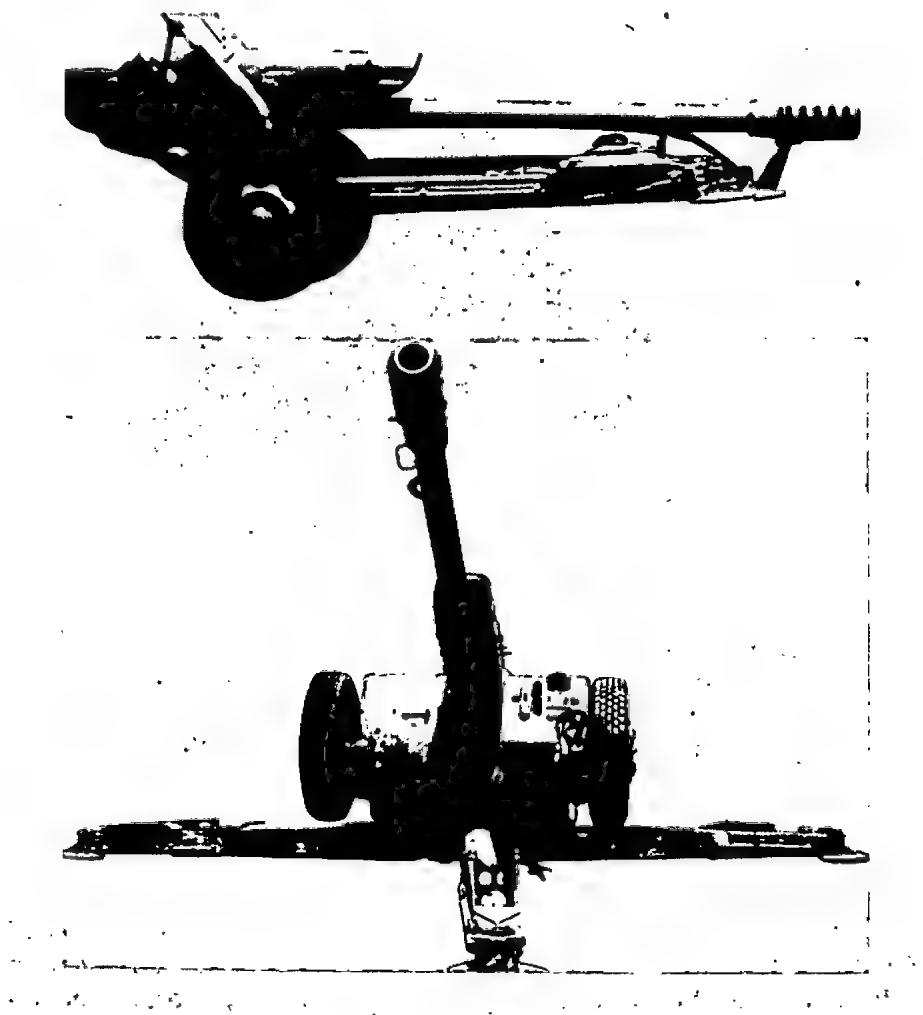
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**SECRET**

**Artillery**

REF ID: A66031

**D-30 122mm Howitzer (M-1963)**



*Characteristics*

- Weight ..... 3.5 tons
- Maximum rate of fire ..... 6 rounds per minute
- Maximum range ..... 16,740 yards

*Remarks*

Rests on three trails and central jack when in firing position. Towed by barrel with trails folded. Has direct-fire antitank capability. Replacing M-30 howitzer as standard equipment in Soviet forces. Has also been seen with Egyptian and Syrian units.

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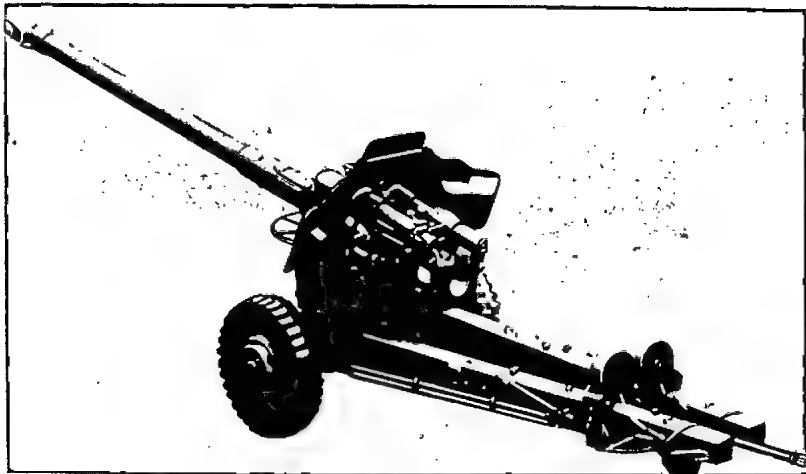


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**SECRET**

**Artillery**

**D-74 122mm Field Gun**



*Characteristics*

Weight ..... 6.2 tons  
Maximum rate of fire ..... 6 rounds per minute  
Maximum range  
(indirect fire) ..... 26,000 yards

*Remarks*

Lighter and more mobile than M-1931/1937. Has double recoil cylinders mounted above barrel behind shield. First observed in 1955. Used by Soviet and some other Warsaw Pact forces and by Communist forces in Southeast Asia.

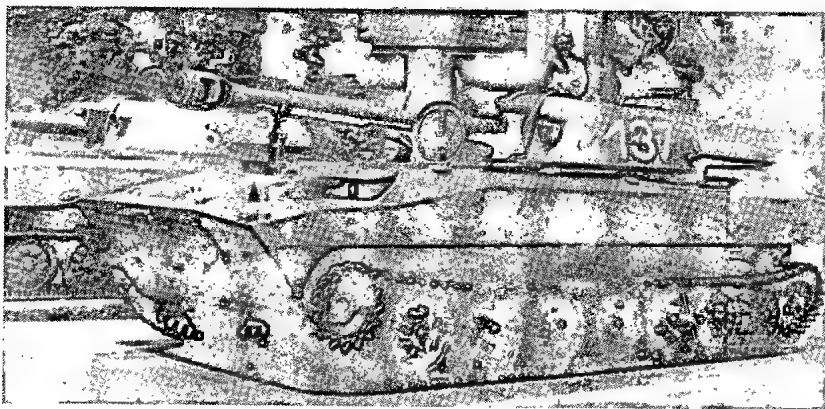
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**SECRET**

**Artillery**

**M-1974 122mm SP Gun**



*Characteristics*

Weight .....17 tons  
Main armament ..... 122mm gun  
Maximum range ..... 17,000 yards  
Rate of fire .....unknown

*Remarks*

Entered service in 1974. Chassis similar to that of PT-76 amphibious tank. Newest piece in the Soviet artillery inventory. Probably has an automatic loader.

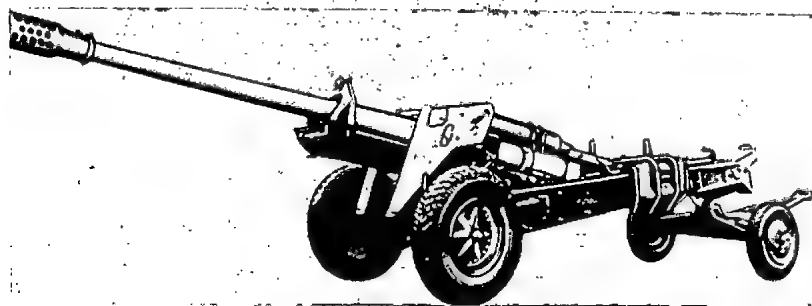
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SECRET

Artillery

M-46 130mm Field Gun



Characteristics

Weight ..... 9.4 tons  
Maximum rate of fire ..... 5 rounds per minute  
Maximum range  
(indirect fire) ..... 29,500 yards

Remarks

Based on naval and coastal guns of same caliber. Features collar around barrel forward of shield and detachable spades on trails. First observed in 1954. Used by Soviet and other Warsaw Pact forces and in Middle East and India.

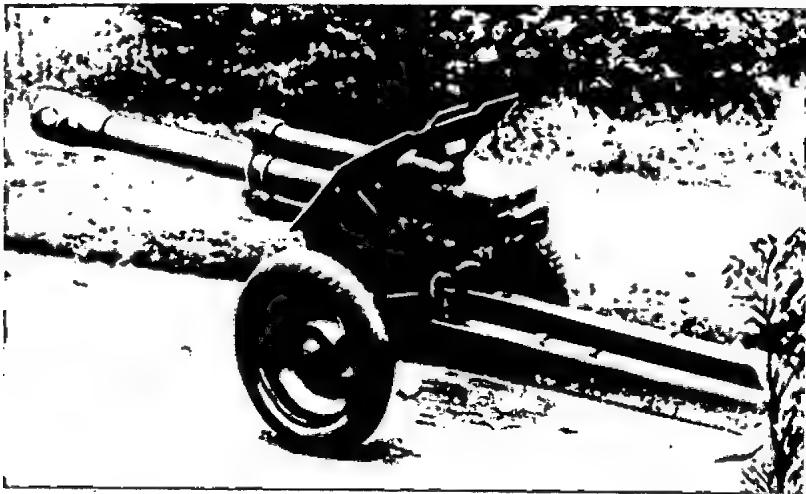
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**SECRET**

**Artillery**

**D-1 152mm Howitzer (M-1943)**



*Characteristics*

Weight ..... 4 tons  
Maximum rate of fire ..... 4 rounds per minute  
Maximum range ..... 13,560 yards

*Remarks*

Essentially the tube of the M-10 152mm howitzer mounted on the carriage of the M-1938 122mm howitzer. More mobile than M-10 because of lighter carriage. Now largely replaced in Soviet units by D-20, but still used in other Warsaw Pact forces and in countries which have received Soviet military aid.

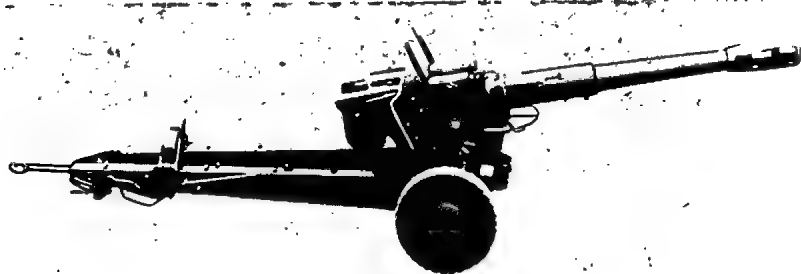
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Artillery

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D-20 152mm Howitzer



Characteristics

Weight ..... 6.5 tons  
Maximum rate of fire ..... 4 rounds per minute  
Maximum range ..... 19,000 yards

Remarks

First observed in 1955. Replacing D-1 152mm howitzer. D-20 is companion piece to D-74 122mm howitzer and distinguishable from it by shorter, thicker barrel and larger muzzle brake. Used by USSR and several other Warsaw Pact countries.

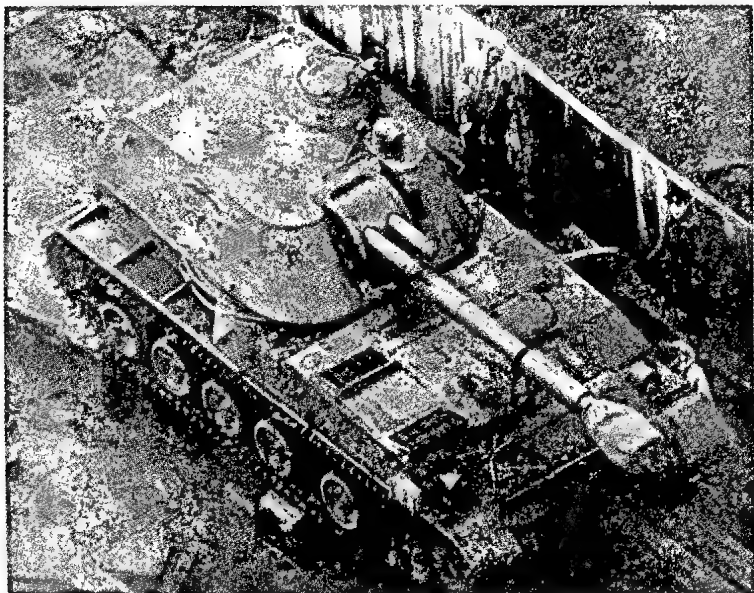
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**SECRET**

**Artillery**

**M-1973 152mm SP Gun**



*Characteristics*

Weight .....	26 tons
Main armament .....	152mm gun
Maximum range .....	19,000 yards
Rate of fire .....	unknown

*Remarks*

Entered service in 1973. Uses modified version of the SA-4 chassis. Probably has an automatic loader.

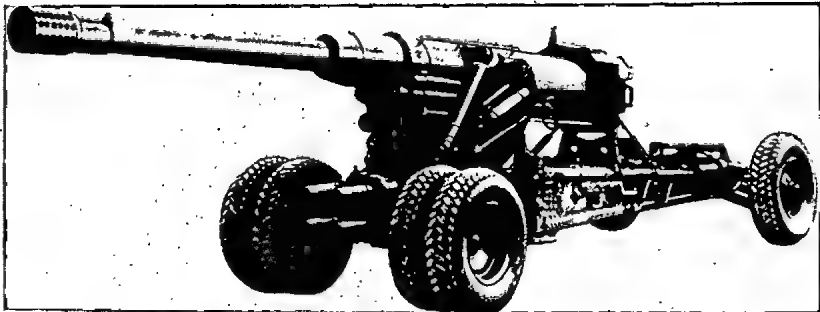
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Artillery

M-1955 180mm Howitzer



Characteristics

Weight ..... 22.5 tons  
Maximum rate of fire ..... 1 round in 2 minutes  
Maximum range ..... 29,500 yards  
Maximum range with  
rocket-assisted projectile ..... 42,500 yards

Remarks

Largest of Soviet towed artillery pieces since World War II. Has dual-mounted wheels but no shield. Shown in Soviet parades but not observed with operational units. Observed in Middle East.

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**SECRET**

**Artillery**

Дальность стрельбы 19,1 км  
Скорость стрельбы 1 в 2 мин

**M-1931 203mm Howitzer**



*Characteristics*

Weight ..... 19.5 tons  
Maximum rate of fire ..... 1 round in 2 minutes  
Maximum range ..... 19,712 yards

*Remarks*

Principal heavy howitzer of Soviet Army before and during World War II. Being reintroduced into service in heavy artillery/mortar brigades at front level. Tracked and wheeled versions.

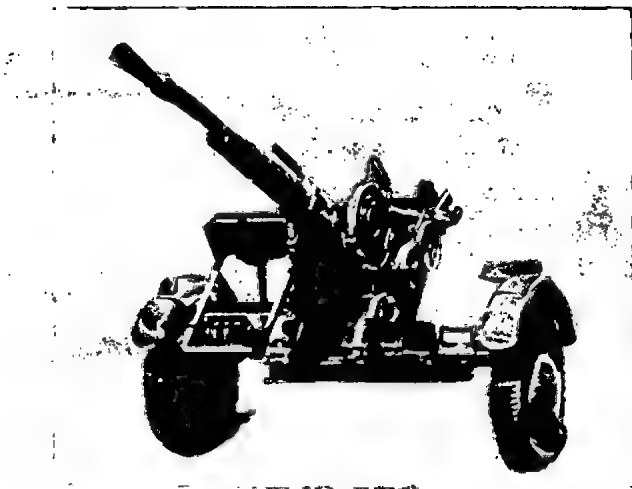
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Antiaircraft Weapons

Source: MAW, 1954

ZPU-1 14.5mm Antiaircraft Heavy Machine Gun



Characteristics

Maximum rate of fire	600 rounds per minute
Practical rate of fire	150 rounds per minute
Maximum effective range	
antiaircraft	4,600 feet
horizontal	2,200 yards

Remarks

Single gun mounted on light two-wheel towed carriage. Also effective against light armor and other ground targets. Introduced in mid-fifties. Apparently no longer used in Soviet forces. Seen in countries which have received Soviet military aid. Widely used in North Vietnam.

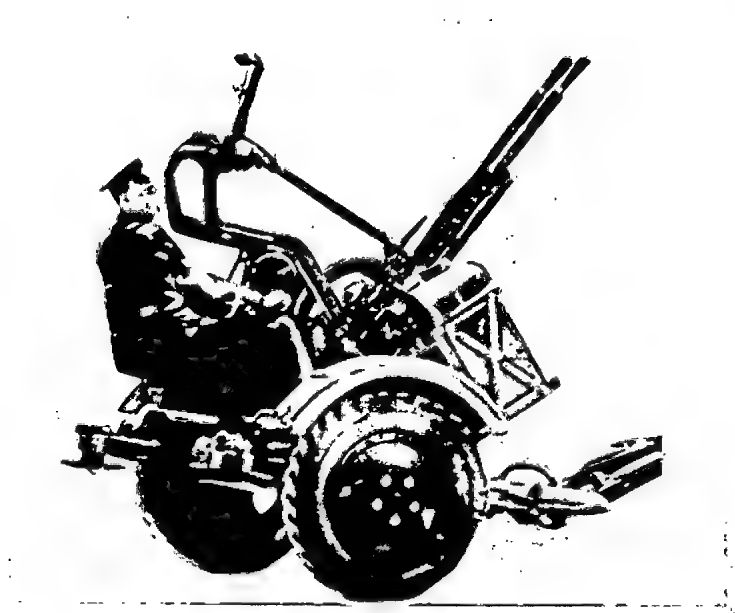
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**SECRET**

**Antiaircraft Weapons**

**ZPU-2 14.5mm Antiaircraft  
Heavy Machine Gun**



*Characteristics*

Maximum rate of fire	..... 600 rounds per minute
	per barrel
Practical rate of fire	..... 150 rounds per minute
	per barrel
Maximum effective range	
antiaircraft	..... 4,600 feet
horizontal	..... 2,200 yards

*Remarks*

Twin-mounted version of ZPU-1 on two-wheel towed carriage. This mount also seen on BTR-40 and BTR-152 armored personnel carrier chassis. Introduced in mid-fifties, ZPU-2 is used in Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid.

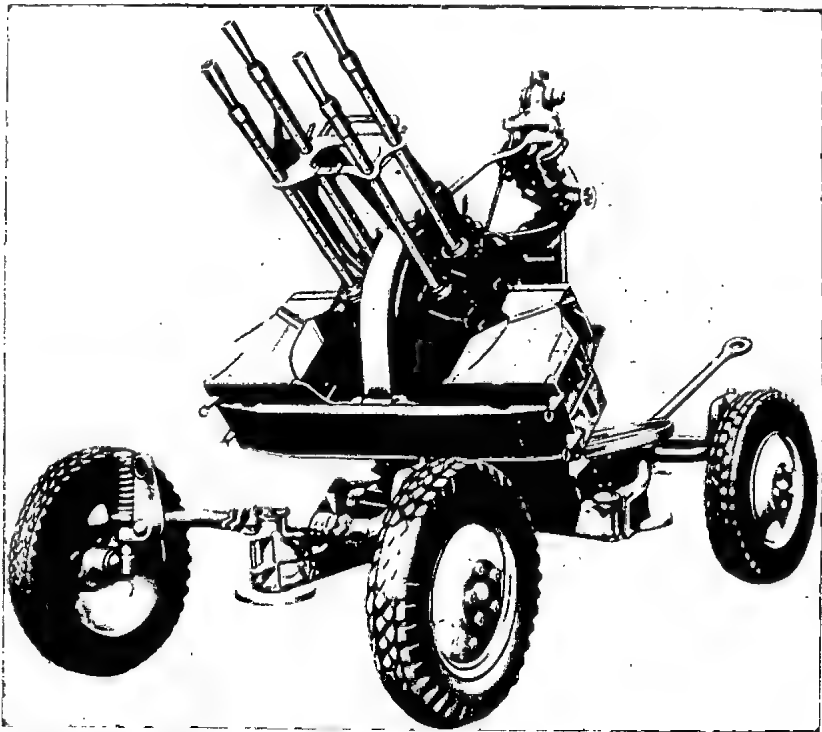
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Antiaircraft Weapons

ZPU-4 14.5mm Antiaircraft  
Heavy Machine Gun



Characteristics

Maximum rate of fire	.....600 rounds per minute
	per barrel
Practical rate of fire	.....150 rounds per minute
	per barrel
Maximum effective range	
antiaircraft	.....4,600 feet
horizontal	.....2,200 yards

Remarks

Quad-mounted version of ZPU-1 on four-wheel towed carriage. Introduced in mid-fifties. Used in Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid.

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Antiaircraft Weapons

ZU-23 23mm Antiaircraft Gun



Characteristics

Maximum rate of fire ..... 800-1,000 rounds per minute per barrel  
Practical rate of fire ..... 200 rounds per minute per barrel  
Maximum effective range  
  antiaircraft ..... 8,200 feet  
  horizontal ..... 7,655 yards

Remarks

Twin-barrel machine cannon mounted on light two-wheel carriage similar to that of ZPU-2. Cylindrical muzzle brakes distinguishable from conical type on ZPU-2. ZU-23 also effective against light armor and other ground targets. Introduced in early sixties. Will probably replace ZPU series of heavy machine guns.

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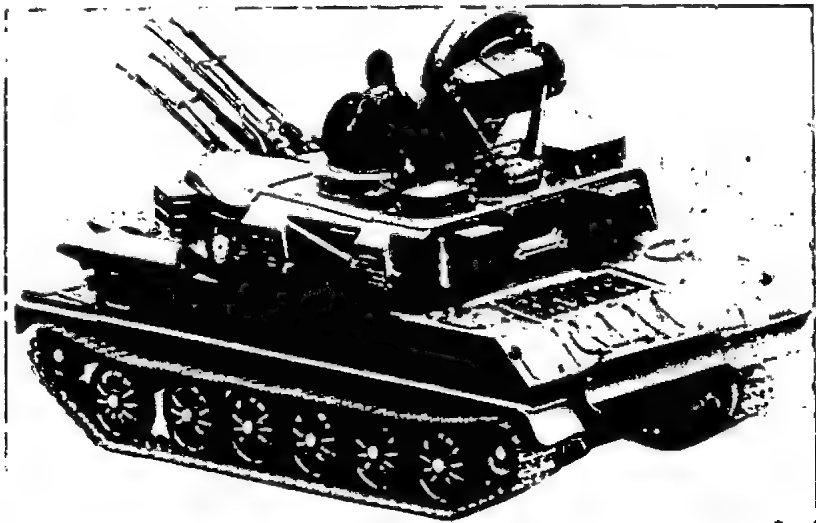


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Antiaircraft Weapons

ANTI-AIRCRAFT WEAPONS

ZSU-23-4 23mm Self-Propelled  
Antiaircraft Gun



Characteristics

Maximum rate of fire	800-1,000 rounds per minute per barrel
Practical rate of fire	300-350 rounds per minute per barrel
Maximum effective range	
antiaircraft radar mode	9,850 feet
antiaircraft optical mode	8,200 feet
horizontal	7,655 yards
Maximum vehicle speed	30 miles per hour
Cruising range	150 miles
Weight	15.4 tons
Crew	4

Remarks

Four liquid-cooled guns in very light armored turret mounted with fire-control radar on chassis similar to that of PT-76 light amphibious tank. Not amphibious. Designed to provide ground forces mobile protection against low-flying aircraft. Also effective against light armor and other ground targets. Infrared light enables it to engage ground targets at night. First observed in 1965. Has been seen with Soviet, Bulgarian, East German, Polish, and Middle East forces.

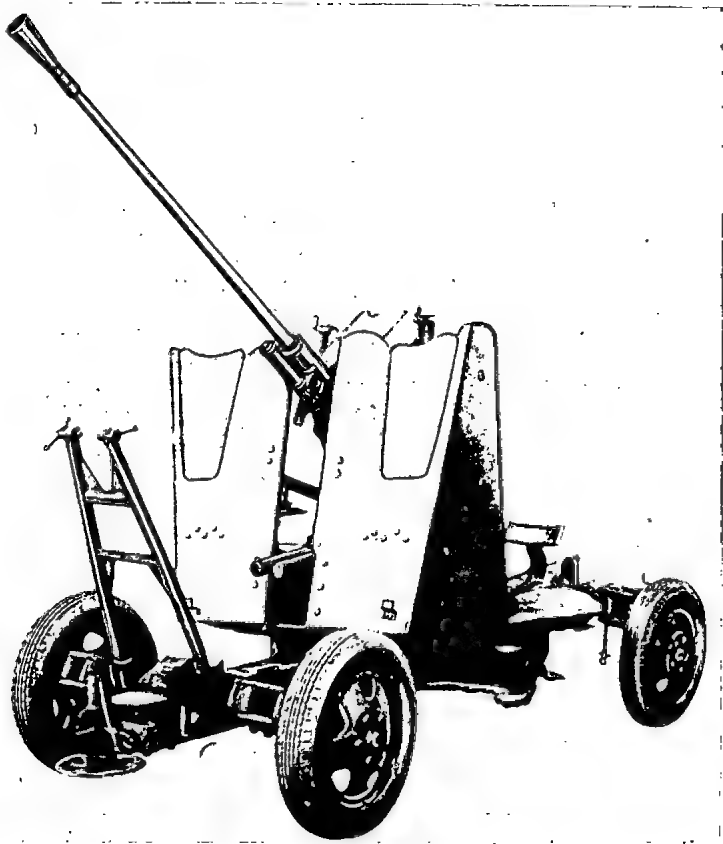
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**Antiaircraft Weapons**

**M-1939 37mm Antiaircraft Gun**



*Characteristics*

Maximum rate of fire ..... 160-180 rounds per minute  
Practical rate of fire ..... 80 rounds per minute  
Maximum effective  
antiaircraft range ..... 8,200 feet

*Remarks*

World War II weapon mounted on four-wheel towed carriage. Not suitable for use against ground targets. Replaced in Soviet forces by S-60 but still used in other Warsaw Pact countries, Cuba, Middle East, and Southeast Asia.

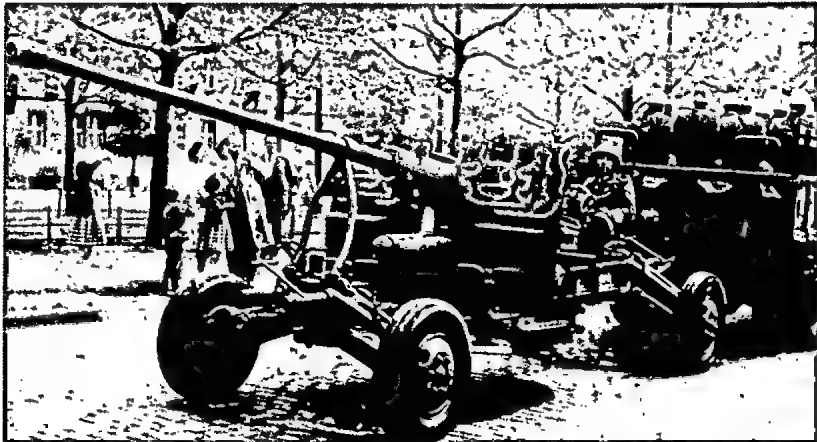
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Antiaircraft Weapons

S-60 57mm Antiaircraft Gun



Characteristics

Maximum rate of fire ..... 105-120 rounds per minute  
Practical rate of fire ..... 70 rounds per minute  
Maximum effective antiaircraft range  
    with off-carriage fire control ..... 19,700 feet  
    with on-carriage optical sight ..... 13,100 feet  
Maximum horizontal range ..... 13,000 yards

Remarks

Mounted on four-wheel towed carriage. Also effective against light armor and other ground targets. First observed in 1950. Has replaced M-1939 in Soviet forces. Used in countries which have received Soviet military aid.

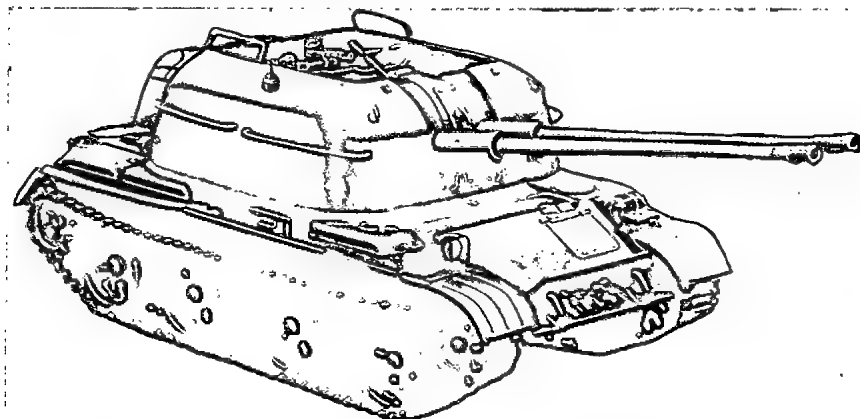
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Antiaircraft Weapons

ZSU-57-2 57mm Self-Propelled  
Antiaircraft Gun



Characteristics

Maximum rate of fire	105-120 rounds per minute
	per gun
Practical rate of fire	70 rounds per minute
	per gun
Maximum effective range	
antiaircraft	13,000 feet
horizontal	13,000 yards
Vehicle speed	31 miles per hour
Cruising range	260 miles
Weight	31 tons
Crew	6

Remarks

Two S-60 guns in open turret mounted on modified T-54 tank chassis. Optical sighting and fire control. Designed to provide ground forces mobile protection against aircraft. Also effective against light armor and other ground targets. Introduced in 1957. Has been seen with Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid. Has largely been replaced in Soviet units by ZSU-23-4 and surface-to-air missile systems.

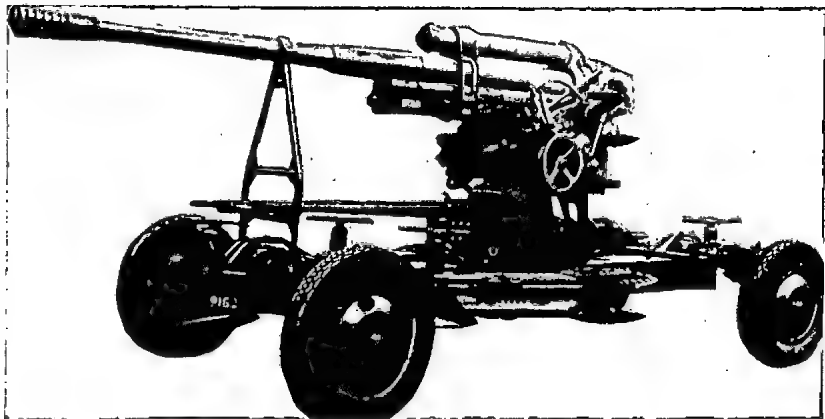
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Antiaircraft Weapons

KS-12 85mm Antiaircraft Gun (M-1939)



Characteristics

Maximum rate of fire ..... 15-20 rounds per minute  
Maximum effective antiaircraft range  
with off-carriage fire control .....33,470 feet  
with on-carriage optical sight .....9,840 feet  
Maximum horizontal range ..... 17,000 yards

Remarks

World War II weapon mounted on four-wheel towed carriage. Uses on-carriage optical sight or off-carriage radar fire control. Essentially same gun as KS-18 but with longer tube. Both are also effective against light armor and other ground targets. Has been replaced by KS-19, but still used by Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid.

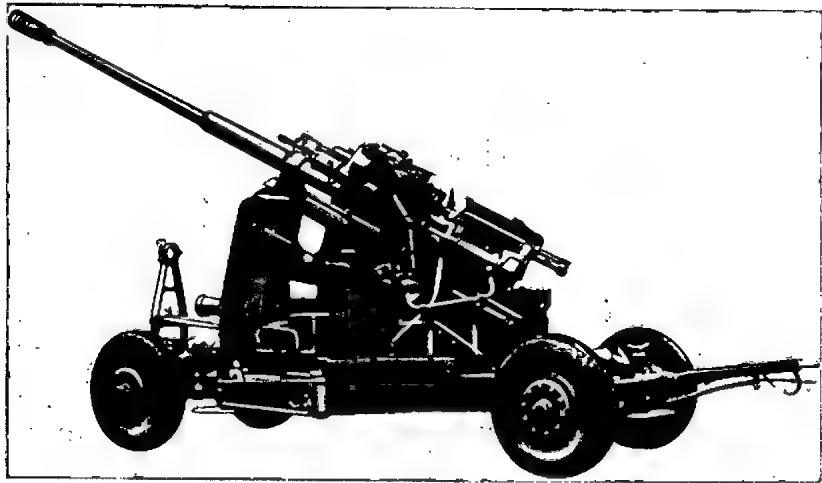
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Antiaircraft Weapons

KS-19 100mm Antiaircraft Gun



Characteristics

Maximum rate of fire ..... 15 rounds per minute  
Maximum effective antiaircraft range  
with off-carriage fire control ..... 41,340 feet  
with on-carriage optical sight ..... 11,480 feet  
Maximum horizontal range ..... 23,000 yards

Remarks

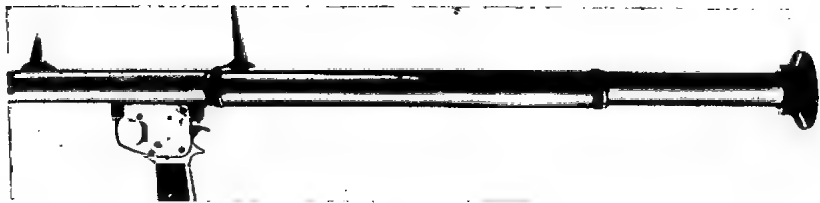
First observed in 1949. Uses off-carriage fire control and director against aircraft. Designed to replace KS-12 and KS-18, it has in turn been replaced by SA-2 surface-to-air missiles. Also effective against light armor and other ground targets.

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**Recoilless Antitank Weapons**

**RPG-2 Antitank Grenade Launcher**



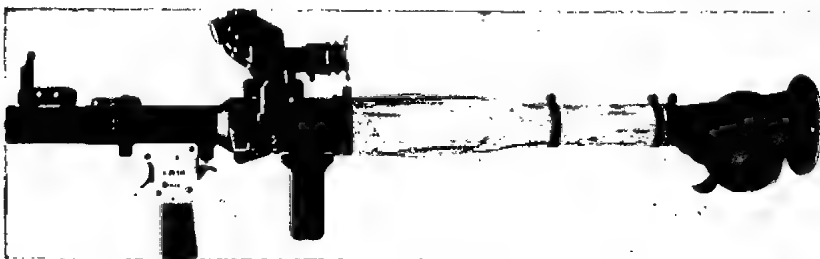
*Characteristics*

Weight ..... 6.3 pounds  
Length ..... 37.5 inches  
Caliber of projectile ..... .80mm  
Range ..... 109 yards  
Armor penetration ..... 6-7 inches

*Remarks*

Light, recoilless, shoulder-fired rocket developed from German "Panzerfaust" in late forties. Effective against tanks at short range. Has been largely replaced by RPG-7. Used in most countries which have received Soviet military aid.

**RPG-7 Antitank Grenade Launcher**



*Characteristics*

Weight ..... 15 pounds  
Length ..... 37.5 inches  
Caliber of projectile ..... .85mm  
Range ..... 608 yards  
Armor penetration ..... 12 inches

*Remarks*

Introduced in 1962. Essentially same type of weapon as RPG-2; which it is replacing. RPG-7 fires rocket-assisted projectile having greater range, penetration, and accuracy. Used in USSR and other Warsaw Pact countries, in Middle East, and in Southeast Asia.

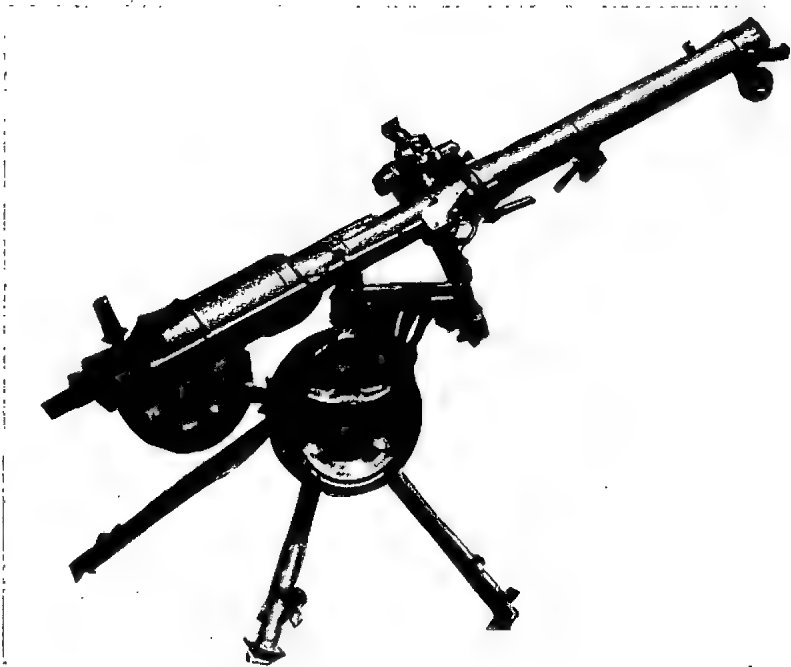
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Recoilless Antitank Weapons

B-10 Recoilless Gun



Characteristics

Weight ..... 188 pounds  
Length ..... .6.4 feet  
Caliber ..... .82mm  
Effective range ..... .435 yards  
Armor penetration ..... .9.4 inches

Remarks

Smoothbore recoilless weapon fired from two-wheel mount or tripod. Can be hand towed by bars on muzzle or mounted on truck. Introduced in early fifties. Used in Soviet airborne units and other Warsaw Pact forces.

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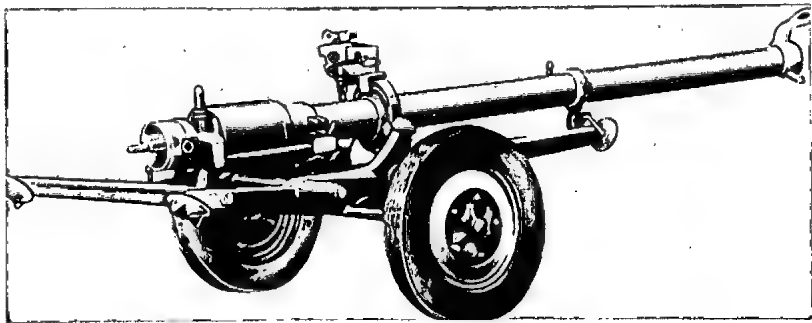
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Recoilless Antitank Weapons

B-11 Recoilless Gun



Characteristics

Weight .....	670 pounds
Length .....	11.1 feet
Caliber .....	107mm
Effective range .....	490 yards
Armor penetration .....	15 inches

Remarks

Largest Soviet recoilless weapon. Fired from wheeled mount or from tripod with wheels removed. Introduced in early fifties. Nearly obsolete in Soviet units but still used by other Warsaw Pact forces.

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**Recoilless Antitank Weapons**

**SPG-9 Recoilless Gun**



*Characteristics*

Weight ..... about 125 pounds  
Length ..... about 7 feet  
Caliber ..... 73mm  
Maximum effective range ..... 1,090 yards  
Armor penetration ..... 13-15 inches

*Remarks*

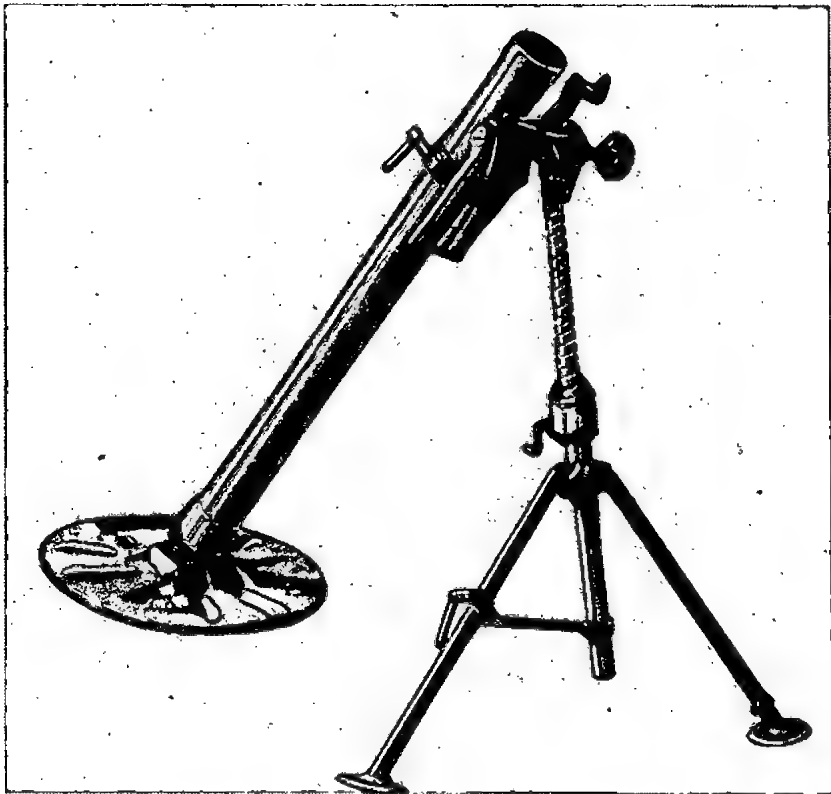
Pictured in 1968 Soviet publication. First Soviet recoilless gun to mount a spotting rifle. Fires round similar to that of RPG-7 grenade launcher.

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Mortars

M-1937, M-1941, M-1943  
82mm Mortar



Characteristics

Weight ..... 123 pounds  
Length of tube ..... 4 feet  
Maximum rate of fire .... 24 rounds per minute  
Maximum range ..... 3,300 yards

Remarks

M-1937 (photograph above) has two short shock absorbers; M-1941 and M-1943, one longer shock absorber. Weapon can be carried by three men or one draft animal. Used by countries which have received Soviet military aid.

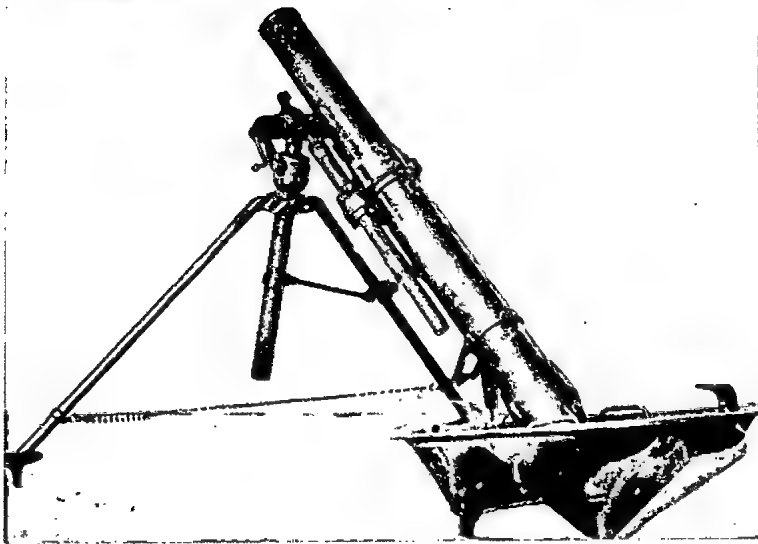
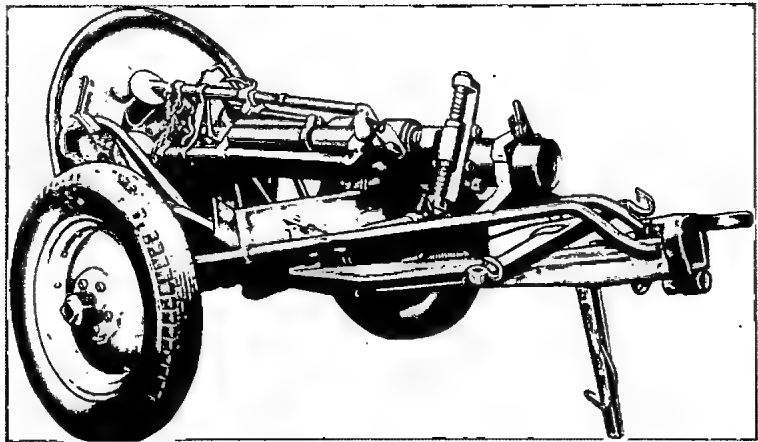
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Mortars

M-1938, M-1943, 120mm  
Regimental Mortar



Characteristics

Weight	
with limber	..... 1,100 pounds
without limber	..... 606 pounds
Length of tube	..... 6.2 feet
Maximum rate of fire	..... 15 rounds per minute
Maximum range	..... 6,230 yards

Remarks

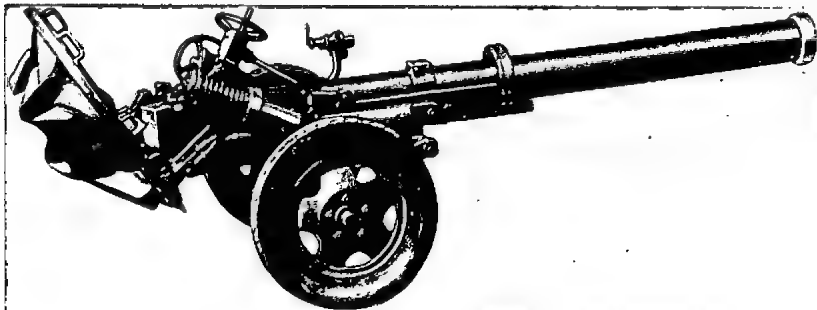
Two versions—M-1943 (photographs above) and M-1938—are complementary to 82mm mortars. Despite its large size, 120mm mortar is highly mobile and can be towed on limber or broken down into three man-portable loads. Used by Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid. Widely used by Communist forces in Southeast Asia.

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Mortars

M-1943, M-160 160mm Mortar



Characteristics

Weight  
    with limber ..... 1.61 tons  
    without limber ..... 1.2 tons  
Length of tube ..... 14.9 feet  
Maximum rate of fire ..... 3 rounds per minute  
Maximum range ..... 8,825 yards

Remarks

Two versions—M-1943 and M-160—can be towed on limber. M-1943 being replaced by M-160 which has longer barrel and is breech loaded. Both versions are used by Soviet and other Warsaw Pact forces and in countries which have received Soviet military aid.

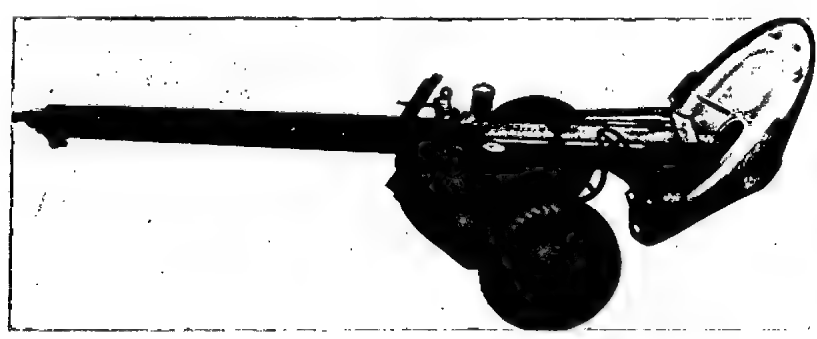
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**Mortars**

**M-240 240mm Mortar**



*Characteristics*

- Weight
  - with limber ..... 4.6 tons
  - without limber ..... 4 tons
- Length of tube ..... 17.5 feet
- Maximum rate of fire ..... 1 round per minute
- Maximum range ..... 10,600 yards

*Remarks*

Largest standard Soviet mortar. Breech loaded. Introduced in early fifties. Found in heavy howitzer/mortar brigades in USSR. Also used in some Warsaw Pact forces and in Egypt.

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**SECRET****Small Arms and Machine Guns****M-1891/30 Mosin—Nagant Sniper Rifle***Characteristics*

Weight ..... 11.3 pounds  
 Ammunition ..... 7.62mm M-1908 rimmed  
 Operation ..... turning bolt  
 Magazine capacity ..... 5 rounds  
 Effective range  
 (with scope) ..... 875 yards

*Remarks*

Sniper version of M-1891/30, which was standard Soviet rifle from 1891 to 1944. Sniper rifle still used in USSR, Eastern Europe, and China, and by Communist forces in Southeast Asia. Being replaced in Soviet units by Dragunov.

**SVD Dragunov Sniper Rifle***Characteristics*

Weight ..... 9.4 pounds  
 Ammunition ..... 7.62mm M-1908 rimmed  
 Operation ..... gas, semiautomatic  
 Magazine capacity ..... 10 rounds  
 Effective range  
 (with scope) ..... 1,100 yards

*Remarks*

Introduced in mid-sixties. Based on AK-47 but has longer barrel, redesigned trigger, and flash suppressor. Side-mounted 4-power scope with infrared viewing device.

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Small Arms and Machine Guns

M-1944 Mosin-Nagant Carbine



Characteristics

Weight ..... 8.6 pounds  
Ammunition ..... 7.62mm M-1908 rimmed  
Operation ..... bolt  
Magazine capacity ..... 5 rounds  
Effective range ..... 440 yards

Remarks

Last of the Mosin-Nagant rifles. Replaced M-1891/30 as standard Soviet rifle. M-1944 is shorter and has folding bayonet. Was itself replaced in Soviet forces by SKS and AK-47, but is still used in some Warsaw Pact and Asian Communist countries.

SKS Simonov Carbine



Characteristics

Weight ..... 8.5 pounds  
Ammunition .. 7.62mm M-1943 short round  
Operation ..... gas, semiautomatic  
Rate of fire ..... 35-40 rounds per minute  
Magazine capacity ..... 10 rounds  
Effective range ..... 440 yards

Remarks

Introduced in 1959. Replaced in Soviet forces by AK-47. Still used in other Warsaw Pact forces and in countries receiving Soviet military aid. Also manufactured and extensively exported to Asian and African countries by China. Chinese version distinguishable from SKS by bayonet which folds down under barrel.

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Small Arms and Machine Guns

AK-47 Kalashnikov Assault Rifle



Characteristics

Weight	9.5 pounds
Ammunition	7.62mm M-1943 intermediate round
Operation	gas
Rate of fire	
automatic	100 rounds per minute
semiautomatic	40 rounds per minute
Magazine capacity	30 rounds
Effective range	330 yards

Remarks

Introduced in 1947. Being replaced by the AKM, which is nearly identical but almost a pound lighter. Versions with folding stock are used by special units such as artillery, airborne, and tank troops. AK-47 is used by Warsaw Pact forces, in countries which have received Soviet military aid, and extensively by Communist forces in Southeast Asia. China and North Korea produce version of AK-47.

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**SECRET**

**Small Arms and Machine Guns**

**PPSh Shpagin Submachine Gun (M-1941)**



*Characteristics*

- Weight (with empty drum) . . . . 10.8 pounds
- Ammunition . . . . . 7.62mm M-1930 pistol
- Operation . . . . . blowback, automatic or semiautomatic
- Rate of fire
  - automatic . . . . . 100 rounds per minute
- Magazine capacity
  - box . . . . . 35 rounds
  - drum . . . . . 71 rounds
- Effective range . . . . . 220 yards

*Remarks*

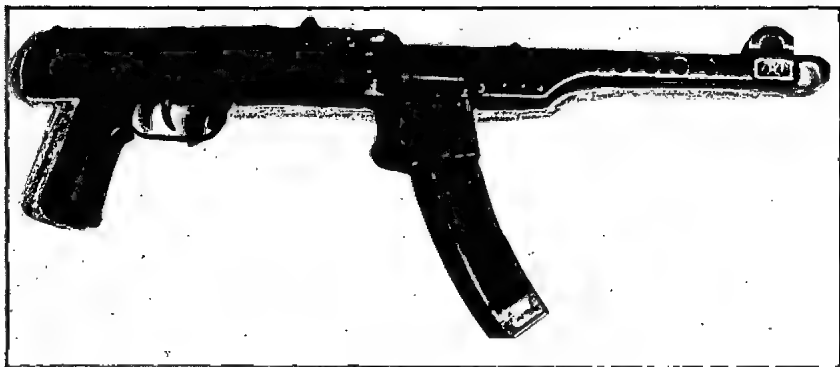
Ruggedly and cheaply built. First models used drum magazine. Has been replaced in Soviet forces by AK-47. China manufactures version called Type 50 with about the same performance. Type 50 has pistol grip and folding stock but no barrel shield. PPSH and Type 50 are used in countries which have received Soviet and Chinese military aid.

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Small Arms and Machine Guns

PPS Sudayev Submachine Gun



*Characteristics*

Weight (with  
empty magazine) ..... 7.5 pounds  
Ammunition ..... 7.62mm M-1930 pistol  
Operation ..... blowback, automatic or  
semiautomatic  
Rate of fire ..... 100 rounds per minute  
Magazine capacity ..... 35 rounds  
Effective range ..... 220 yards

*Remarks*

Entered service in 1943. Like PPSH, has been replaced in Soviet forces by AK-47. PPS is lighter than PPSH, has folding stock, and operates only with box magazine. Used extensively in Southeast Asia.

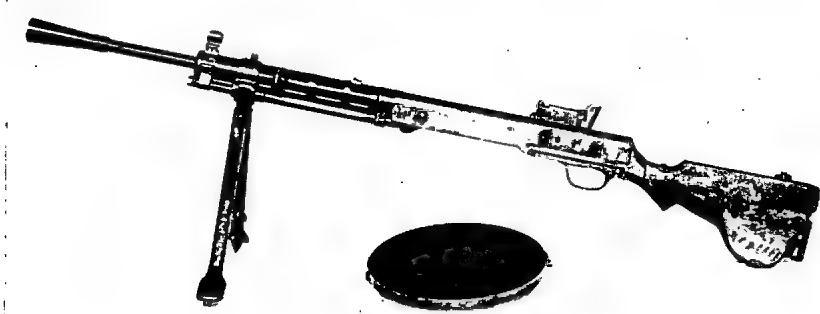
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Small Arms and Machine Guns

DP, DPM Degtyarev Light Machine Gun



*Characteristics*

Weight ..... 20 pounds  
Ammunition ..... 7.62mm  
Operation ..... gas, automatic  
Rate of fire ..... 150 rounds per minute  
Magazine capacity ..... 47 rounds  
Effective range ..... 880 yards

*Remarks*

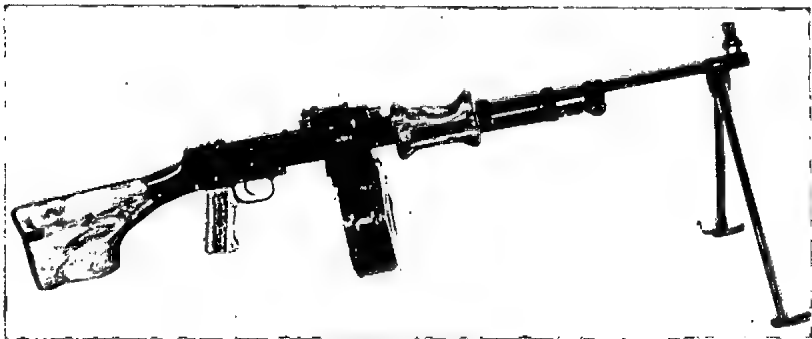
Introduced in late twenties. DP together with DPM modified version was standard Soviet squad light machine gun until introduction of RPD in 1949. DP and DPM have slotted barrel casing and pan-type magazine mounted on top of gun. Although obsolete in Soviet forces, they are used in countries which have received Soviet military aid. Similar RP-46 model uses belt feed and has handle on top.

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Small Arms and Machine Guns

RPD Light Machine Gun



Characteristics

Weight (loaded) ..... 15.6 pounds  
Ammunition ..... 7.62mm  
Operation ..... gas, automatic  
Rate of fire ..... 150 rounds per minute  
Magazine capacity ..... 100 rounds  
Effective range ..... 875 yards

Remarks

First observed in 1948. Standard squad automatic weapon until replaced by RPK. Has drum magazine and bipod mounted near muzzle. Used in countries—particularly in Southeast Asia—which have received Soviet military aid.

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Small Arms and Machine Guns

RPK Kalashnikov Light Machine Gun



*Characteristics*

Weight (with  
empty drum) ..... 12.3 pounds  
Ammunition .. 7.62mm M-1943 short round  
Operation ..... gas, automatic  
Rate of fire ..... 130-150 rounds per minute  
Magazine capacity  
box ..... 40 rounds  
drum ..... 70 rounds  
Effective range ..... 875 yards

*Remarks*

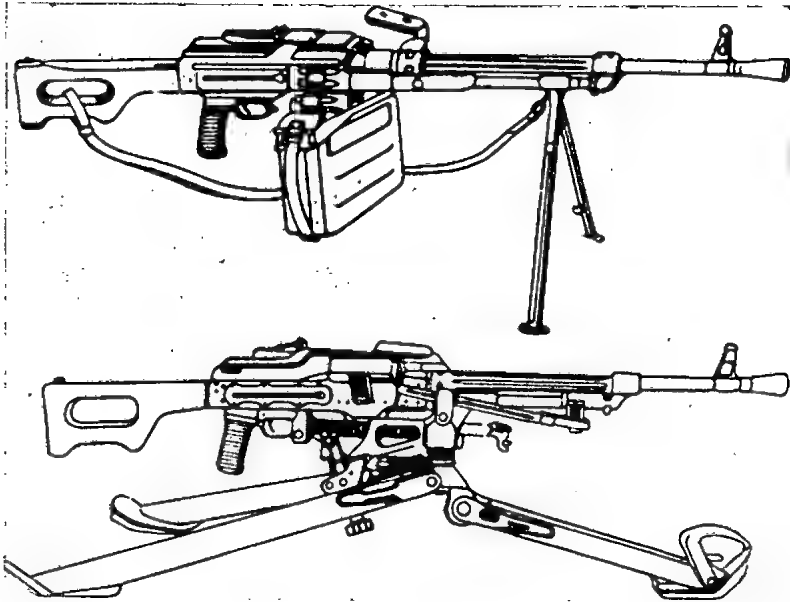
Standard Soviet squad light machine gun. Introduced in 1961. Essentially the AK-47 assault rifle with longer, heavier barrel, bipod, differently shaped stock, and larger capacity magazine. Some parts are interchangeable; for example, AK-47 magazine can be used on RPK. RPK is used in some Warsaw Pact and Southeast Asian forces.

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Small Arms and Machine Guns

PK Kalashnikov General Purpose Machine Gun



Characteristics

Weight (with empty drum)	12.3 pounds
Ammunition	7.62mm M-1943 short round
Operation	gas, automatic
Rate of fire	130-150 rounds per minute
Magazine capacity	
box	40 rounds
drum	70 rounds
Effective range	875 yards

Remarks

A further modification of AK-47 and RPK. PK uses rimmed cartridge, is belt fed, has different receiver and gas cylinder, and provision for mounting gun on tripod. First observed in mid-sixties.

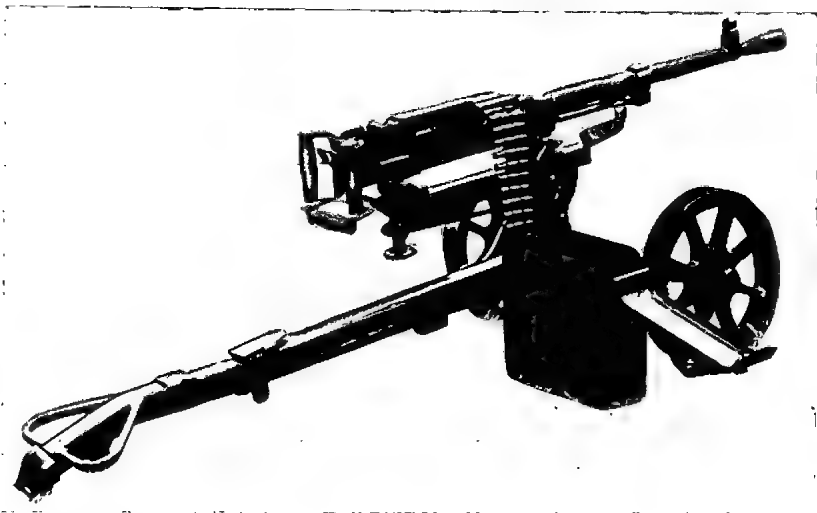
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Small Arms and Machine Guns

SG, SGM Goryunov Machine Gun (M-1943)



*Characteristics*

Weight (gun only) ..... 29.8 pounds  
Ammunition ..... 7.62mm M-1930D  
Operation ..... gas, automatic  
Rate of fire .... 250-300 rounds per minute  
Effective range ..... about 1,100 yards

*Remarks*

Has been modified for mounting on tanks and APCs, but usually found on two-wheel mount. SGM distinguishable by fluted barrel. Being replaced in ground support role by PK Kalashnikov general purpose machine gun. Used by countries which have received Soviet military aid.

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Small Arms and Machine Guns

DShK Degtyarev-Shpagin  
Heavy Machine Gun (M-1938/45)



*Characteristics*

Weight (gun only) ..... 75 pounds  
Ammunition ..... 12.7mm rimless  
Operation ..... gas, automatic  
Rate of fire ..... 125 rounds per minute  
Effective range  
ground targets ..... 3,300 yards  
air targets ..... 3,000 feet

*Remarks*

Designed for use against aircraft and light armored ground targets, and adopted as primary AA machine gun on tanks and assault guns. Ground version is mounted on two-wheel carriage. Vehicle-mounted version is being replaced in Soviet units by KPV 14.5mm heavy machine gun, which is similar to ZPU-1. Used extensively and effectively by Communist forces in Southeast Asia as AA weapon, particularly against helicopters.

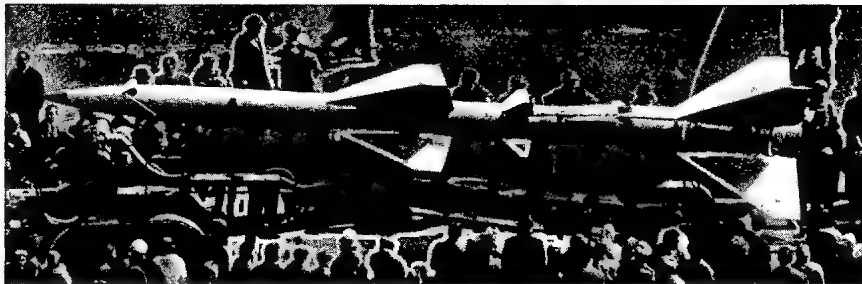
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Surface-to-Air Missiles

SA-2



Characteristics

IOC .....1958  
Launchers per site ..... 6  
Maximum range .....27 nm  
Maximum effective  
altitude .....90,000 ft  
Minimum effective  
altitude .....300 ft  
Guidance ..... Radio command  
Warhead ..... HE/nuclear probable

Remarks

Transportable. Used by East European countries and exported widely. Used against medium-to-high-altitude targets.

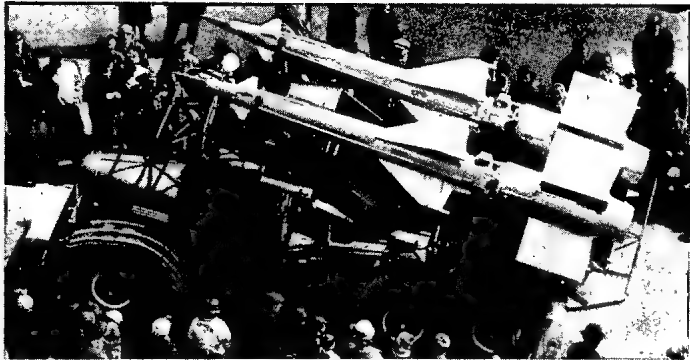
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Surface-to-Air Missiles

SA-3



Characteristics

IOC .....1961  
Launchers per site .....4 dual  
Maximum range .....13 nm  
Maximum effective  
altitude .....60,000 ft  
Minimum effective  
altitude .....150 ft  
Guidance ..... Radio command  
Warhead .....HE

Remarks

Low-to-medium-altitude air defense system. Road transportable.  
Deployed widely in Eastern Europe, Cuba, and in the Middle East.  
Some sites also have new four-rail launcher.

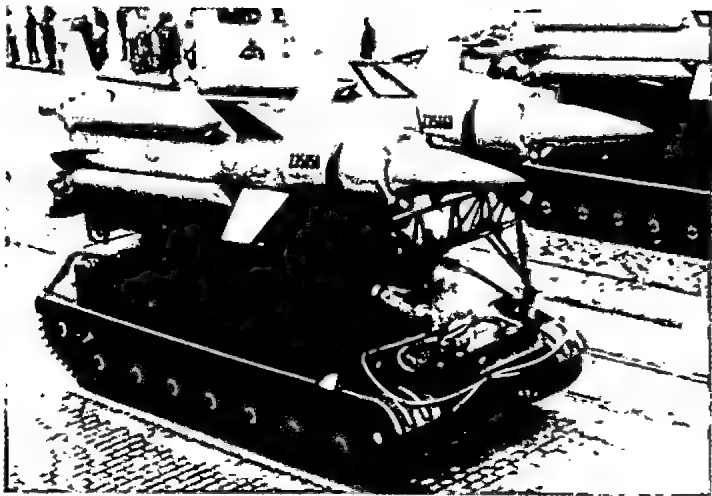
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Surface-to-Air Missiles

SA-4



Characteristics

IOC .....1967  
Missiles per vehicle ..... 2  
Maximum range .....24 nm  
Maximum effective  
altitude .....50,000 ft  
Minimum effective  
altitude ..... 1,000 ft  
Guidance ..... Radio command  
Warhead .....HE

Remarks

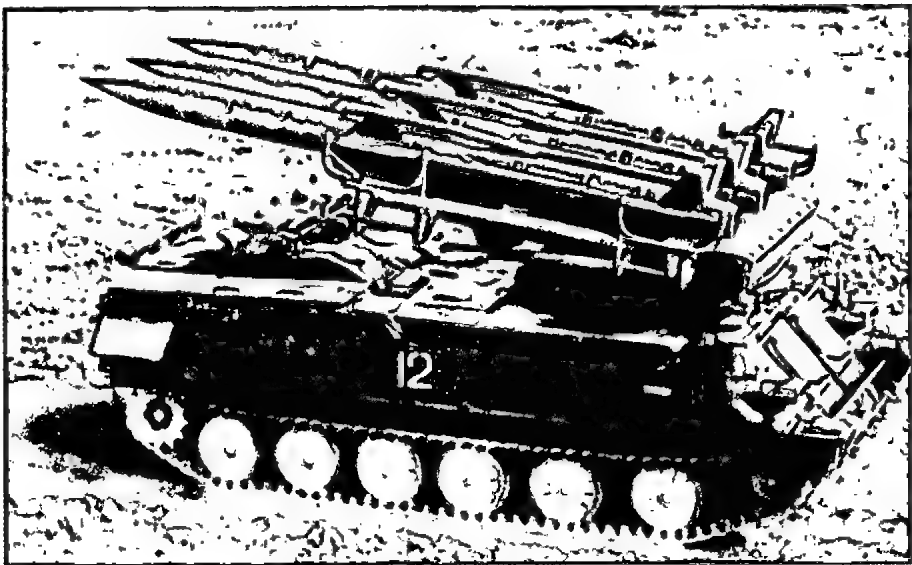
Mobile system deployed primarily with Soviet field forces, but also exported to East Germany and possibly Czechoslovakia in limited numbers.

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Surface-to-Air Missiles

SA-6



Characteristics

IOC .....	1970
Missiles per vehicle .....	3
Maximum range .....	12 nm
Maximum effective altitude .....	30,000 ft
Minimum effective altitude .....	100 ft
Guidance .....	Semiactive homing
Warhead .....	HE

Remarks

Provides air defense for field forces. Effective as a low-to-medium-altitude air defense weapon. Deployed with Eastern European armies and with Arab forces in the Middle East.

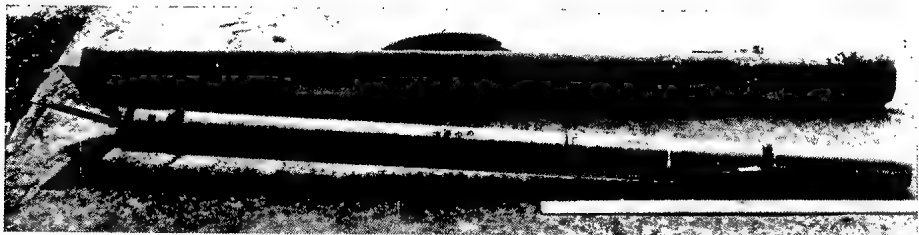
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**Surface-to-Air Missiles**

**SA-7**



*Characteristics*

IOC .....1967  
Maximum effective range .....2.3 nm  
Maximum effective  
altitude .....7,500 ft  
Minimum effective  
altitude .....50 ft  
Guidance ..... Infrared homing  
Warhead .....HE

*Remarks*

Man-portable, shoulder-fired weapon. Effective against helicopters and slow-flying aircraft. Widely used by Communist armies and in the Middle East.

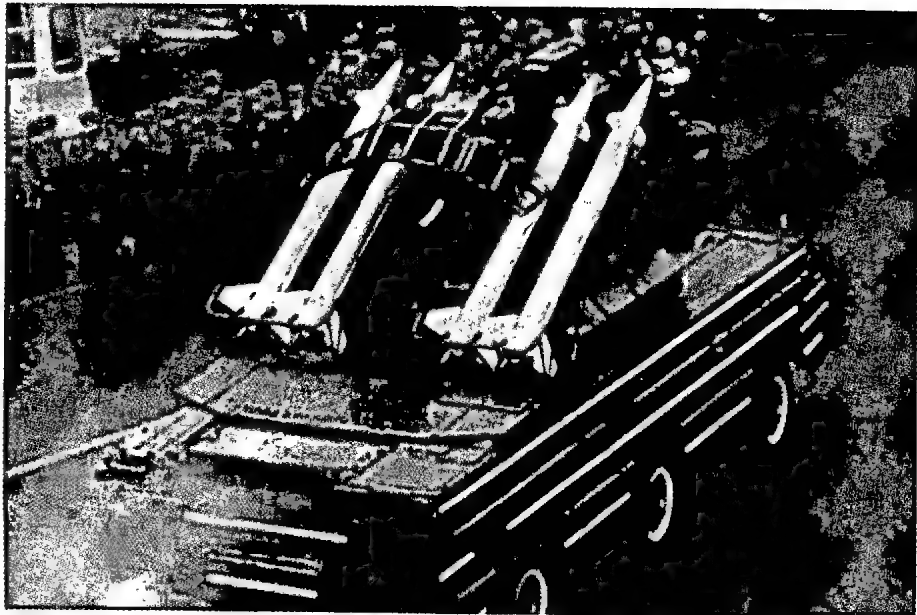
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Surface-to-Air Missiles

SA-8



Characteristics

IOC .....	1974
Missiles per vehicle .....	4
Maximum range .....	6 nm
Maximum effective altitude .....	15,000 ft
Minimum effective altitude .....	150 ft
Guidance .....	Radio command
Warhead .....	HE

Remarks

Newest mobile tactical surface-to-air missile. Basic SA-8 vehicle contains acquisition and fire control radars as well as launchers. Only missile system with basic fire components on a single vehicle. Limited deployment within Soviet Union.

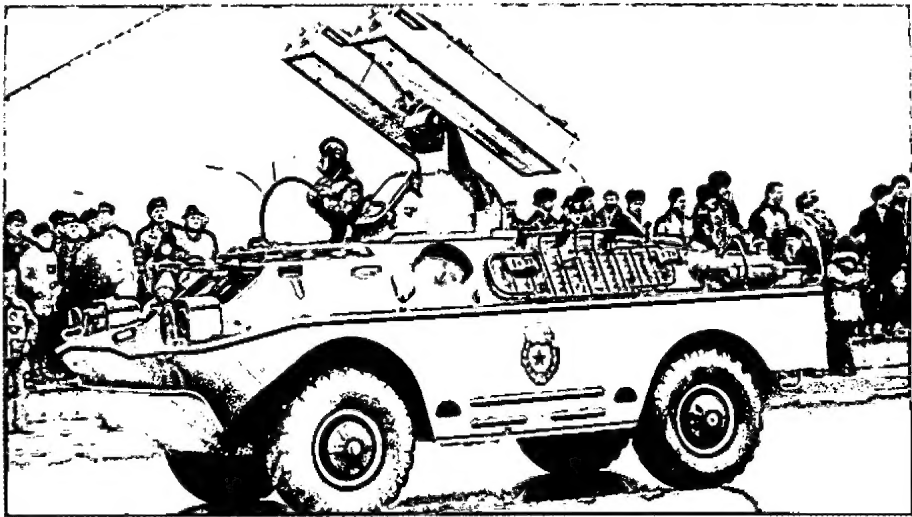
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Surface-to-Air Missiles

SA-9



Characteristics

IOC ..... 1968  
Missiles per vehicle ..... 4  
Maximum range ..... 2.3 nm  
Maximum effective  
altitude ..... 11,800 ft  
Minimum effective  
altitude ..... 50 ft  
Guidance ..... Infrared homing  
Warhead ..... HE fragmentation  
Launch vehicle ..... BRDM-2 armored  
scout car

Remarks

System is replacing low-altitude antiaircraft guns in combat units. Deployed with Soviet forces. Missiles are similar to the SA-7, but are more effective against high-performance aircraft.

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